DOMESTIC ENGINEERING

Whole No. 953. Vol. LIV. No. 11. 325 Dearborn St., Chicago. March 18, 1911

CONTENTS

A Chat with the "Little Fellow".....273
News from Pittsburgh and Vicinity.....275
Milwaukee and Wisconsin News 275
The 23rd Annual Convention of the New York State Association of Master Plumbers.....276
The Abolition of Drinking-Cups 279
E. R. Pierce's Home in Belfast, Me., Destroyed by Fire 279
Modern Plumbing in Germany.....280
Convention Dates 284
The Proposed Cleveland Plumbing Code:
Yards, Sub-Soil and Other Drains—Roof Conductors or Leaders—Soil and Paste Pipes.....285
Vents—Refrigerator, Safe and Special Wastes.....286
Fixtures—Water Supply 287
Toilet Rooms 288
Inspection and Test—Catch-Basins—Cesspools.....290
Septic Tanks—Vaults 291
Obituary:
John Van Pelt—W. D. Whitman—Edward S. Freeman—W. H. Prescott.....291
The Metal Market:
Pig-Iron Market Firmer—Old Iron—Lead—Copper Surplus Again Larger—Tin—Spelter 292
Here and There in the Trade.....292
"Domestic Engineering" Cartoon on "The Dangers of Under-Estimating," No. XXX 293
Among the Wholesalers:
Jobbers of Plumbing Supplies Hold Annual Meeting—Annual Meeting of Wrought Pipe Jobbers—Radiator Co. to Start Business in San Francisco, Cal.—Now with the Modern Water Supply Co.—The "Detroit" Drainboard—Pierce, Butler & Pierce Open Branch in Cleveland—Purchases Valuable Tract of Land—Murdock Plumbing Supply-House Visited by Fire—March Meeting of Illinois Chapter of the American Society of Heating and Ventilating Engineers—Personal Mention 294
Anent the Plumbing-Supply Trade of San Francisco—Trade Literature Received This Week—Indiana Supply Co. Enlarging Its Facilities—A Sanitary Bunk of Pipe-Construction 295
Valve-Efficiency Maintenance—Interesting Addresses to be Given at Boston Congress of Technology—Floor-Drains and Back-Water Traps.....296
Columbus, O., Has New Housing Code.....296
New England News 60
Classified Advertisements 62
Index to Advertisers 64
"Domestic Engineering" Buyers' Directory 66

A CHAT WITH THE "LITTLE FELLOW."

How often do we hear it said, when the question of the systematization of business is brought up, "Of course, that's all right for the man who does a large business, but you know I am only a little fellow." Be it known that the little fellow is in the majority in any trade or business of life. Abraham Lincoln is credited with saying: "God must have loved the poor people, for he made so many of them." If there is any place in the world where system is needed, it is in the business of the little fellow. He has no margin for extravagances. He cannot afford to neglect details, for his business is composed of details, each item of his yearly work representing but a drop in the ocean of business. If he loses his grip on details, his business has gone from under him.

It must not be imagined, however, that it would be safe to call the man who spoke a "little fellow" to his face. He really considers himself a big fellow, but applies the modest term to himself to evade the issue at hand. **Unfortunately, evasion does not produce exemption.** The little fellow should study carefully the possible advantages of that which he is trying to side-step.

Consider for a moment the problem of handling the daily mail. In a large business firm, this receives expert and systematic treatment. Its volume prevents its ignoring. The small business man (we use the word small only in comparison) receives perhaps from six to twelve letters daily. The mail being small, it is often thought it can be handled at any time. "I'll get at that this afternoon," says the "little fellow." The afternoon comes, and there are 57 varieties of the infernal regions active on some particular job. By the time matters have been straightened out, every other department of the daily work has fallen out of step, and the mail is not even thought of. Of course, the letters have been opened, hastily read and laid aside. One of them may contain information about a possible contract; another is a reminder of an unfulfilled promise on a special piece of work, perhaps repair work. The following morning's mail is spicy enough to make him take action on half of it. The preceding day's

mail is hastily thrust into a pigeon-hole "until I get time."

It does not pay to neglect correspondence. Probably the most costly case of neglected correspondence on record is that afforded by the British Foreign Office. It is well worth considering. Neglect to answer a letter written by a black man from a foreign country cost England $45,000,000 and several lives, and caused a country to pay heavy blood-tribute, resulting in a king losing his throne and his life.

In 1863 the king of Abyssinia was Theodore. He was of humble origin, his mother selling medicines in the market-place. Educated at a convent, the boy passed through all the customary stages of that country's brigandage to a kingship. Like Alexander, he was consumed with the fires of ambition. He proclaimed himself as king of kings of Ethiopia. In 1863, through Captain Cameron, the British consul of Abyssinia, he forwarded a letter to Queen Victoria, requesting ambassadorial privileges for his country, and permission to send an embassy to London. You will understand that Theodore was of considerable importance in his own country. He had a trained army of 150,000 men, and he himself was noted as being the best shot, the best spearsman, the best runner and the best oarsman in his dominion.

The British Foreign Office, however, did not seem to be aware of his athletic record. If it had, Theodore might have had a sporting chance to get a reply. The receiver of the letter thought a negro at long distance a negligible quantity and filed it away without reply. Theodore, at Debra Tabor, waited long and grew angrier with every month of silence. Finally, Cameron and his companions were imprisoned; the British realized the sin of neglect; a tedious war began and finally Sir Robert Napier effected the release of the imprisoned and the conquest of the imprisoners. Theodore killed himself in the last hour of defeat.

A wide-awake office-boy could have saved that $45,000,000, in all probability, if he had drafted up a courteous reply, acknowledging the communication and hoping that in the near future arrangements might be made to satisfy Theodore's desire. In the meantime, Consul Cameron could have been instructed to size the situation up, and see how far concessions would be wise.

It is not likely that the letter you pigeon-holed will lose you $45,000,000, but considering the proportion that $45,000,000 bears to the wealth of the English nation, it is more than likely that a neglected letter might be equally disastrous to your business.

There is nothing so small that it can safely be neglected. The old story, telling of how a kingdom was lost by the loss of a nail in a horse's shoe, is very applicable to our daily doings. We never know exactly what influence our neglect may have upon our plans for the future. The lines of Hamilton, the poet, are applicable in this connection:

"This learned I from the shadow of a tree
That to and fro did sway upon a wall:
Our shadow-selves, our influence, may fall
Where we ourselves can never be."

Another source of trouble to the little fellow is in his inability to pay his bills promptly. He would like to, but his lack of system does not permit him to fulfill his desires. He always seems to be crushed down by a pile of bills at some particular moment. When these are tided over he breathes freely, and promptly forgets to make provision for the next pile. We know of one small business man who has three bank accounts—one in his wife's name, the second in his own, and the third in the name of the firm. His household expenses are taken care of by the wife's account. His overhead expenses, such as rent, lighting, heating and other fixed charges, are provided for by his personal account. The firm account runs the rest of the business. He has divided his fixed charges by 52, and each week pays into his personal account the weekly proportion on these, so that he is always sure of meeting these promptly. He is never in debt. He can tell to a fraction, by a glance at his bank account and a comparison of bills due, how he stands. Of course, this may seem a small matter to those who are able to provide a book-keeper, but the man who needs help is the man who lacks system, and these lines are written for him.

Another weakness in small businesses is lack of initiative and understanding in going after business in a business-like way. **The attitude of business-getting is more of the "hanger-on" type than of the "follow-up" type. There is too much cooling of heels at other people's doors, and too little using of brains in carrying an aggressive campaign into business territory.**

Let us suppose that a small firm considers business possible for 12 blocks in every direction from the store. Every residence in that area contains a possible customer. The customers are not likely to walk the streets at night looking up the address of a plumber or steam-fitter that they may need a month from now. They do this in the case of the doctor, the grocer and the drug-store. These they may need at any time, and in seeking a new location their first exchange of conversation is to the effect that there is a drug-store two blocks away, a doctor around the corner, and a grocer on the next street. This is considered to be important family information. The plumber and steam-fitter is not blessed by such careful family attention. He has to introduce himself to their notice. A follow-up letter attractively written, sent to every residence on one block, and these blocks canvassed steadily, month by month and one

at a time, by such letters, can do much in bringing business to the man who really wants it and who is proud of his work. Let us suppose that one of these letters might read somewhat like this.

"Did you find your coal-bill unnecessarily high last month? It may have been the fault of your heating installation, but it probably was not. You may have changed your coal unadvisedly; you may be making a mistake in your methods of firing. It is our business to know these things, and we will be glad to assist you in bringing your heating expenses to the lowest possible amount consistent with proper heating efficiency. Will be very glad to have our representative call upon you and give you our advice. Our consultation fee is low, and should any change or repairs be necessary, we can garantee you first-class work at reasonable prices. When in trouble remember our 'phone number. We are at your service any time."

A similar letter might be sent out dealing with the possibilities of unsanitary plumbing installation. These are only suggestions. The varieties of follow-up letters are infinite, but if any of our readers want assistance in preparing a follow-up campaign, we will be very glad to give them our advice and co-operation. Just remember that you are not only a plumber and steam-fitter, but you are a health-and-comfort doctor, and a doctor is entitled to his fee.

There is never any need of being discouraged. It is all a question of right thinking. A man can rise no higher than he thinks. Somebody said this before in terser form: "As a man thinketh in his heart, so is he," and nobody has yet disproved the truth of this statement.

The juggling of prices to get business is an evidence of wrong thinking. It is the first sign of acknowledgment of defeat. It is a confession of incompetence to get an honest price for an honest day's work. The man who has come to that point that his only hope of holding his business is by underestimating his value, is just about ready to quit. Tom Reed's message to Manley in 1896 is a significant one and has been considered a telegraphic epigram ever since: "God hates a quitter."

NEWS FROM PITTSBURGH AND VICINITY.

Pittsburgh plumbing contractors will soon start to bid for the plumbing and heating work for the new 10-story hotel which is to be built in Erie, Pa., by the Ft. Pitt Hotel Co., of this city. This new house will be on the same high plane as the Ft. Pitt is, and the plumbing work will be one of the largest contracts to be let. General Manager William Patterson, of the Ft. Pitt Hotel, has advised "Domestic Engineering" that it is planned to have the new hotel completed by early fall.

There promises to be a lot of work for plumbers in this district during the next few months, according to architects and contractors. Among the new contracts which plumbers will be asked to bid on are the following:

American Bridge Co., new office building to cost $75,000, Cuthbert Bros. having secured the construction work.

Brookline school board will erect a $12,000 school-house at once in Brookline, a suburb.

Roseburg Land Co., of Pittsburgh, will build 10 modern dwellings in Bellevue at a cost of $135,000.

Mrs. Mary Ingram will build 10 brick houses in Ingram at a total cost of $50,000.

Davidson Bros. will build 30 houses at Fisk and Cabinet streets at a cost of $100,000.

Teutonia Fire Insurance Co., Northside, will spend $15,000 in erecting a new office building.

The Tippecanoe Club will spend $50,000 in erecting a new club-house at Glenover, in which will be included a mammoth kitchen.

The John J. Cella Hotel is to be remodeled and improved at a cost of $25,000.

The Ben Avon Presbyterian Church will erect a new edifice costing $45,000.

These are only a few of the largest contracts which will keep plumbers in this district busy during the coming spring season. Work will start on the majority of new work as soon as the weather breaks, and as a result the larger plumbing contractors are busy chasing up specifications.

The fact that $1,500,000 will be spent by the Carnegie Technical Schools this year will mean a lot of work for plumbers and heating contractors. The money is ready

MILWAUKEE AND WISCONSIN NEWS.

Milwaukee, Wis.—The Klumb & Droese Co., plumbers at 2010 Fond-du Lac Ave., has filed an amendment to its articles of incorporation changing its name to the L. J. Droese Co.

Stoughton, Wis.—This city will soon enter into a contract with the E. R. Harding Co., of Racine, for the construction of a new sewerage system. Work will start before April 1 and about 10 miles of sewerage will be laid, divided into three districts. The E. R. Harding Co's. bid was $69,999.

Beloit, Wis.—Herbert Palmerton has opened a new plumbing, heating and gas-fitting shop at 316 East Grand Ave. Mr. Palmerton was formerly engaged in the plumbing business at Delavan.

Baraboo, Wis.—H. G. Welch will soon have his plumbing establishment located in a new building which is being erected on Broadway by Mr. Welch and H. M. Johnston. The new quarters will be distinctly modern and a decided improvement over Mr. Welch's location on Walnut street.

Milwaukee, Wis.—The plumbing in the new department store of the Edward Schuster & Co., Twelfth and Walnut streets, was installed by Joseph Wittig, 536½ East Water St. Mr. Wittig has been a successful bidder on a number of large jobs in this city of recent years. A ventilating plant has been installed in the big store which changes the air of the store every 15 minutes.

Milwaukee, Wis.—Complaints are being made in some quarters that the city administration is holding up the report of the Menomonee Sewerage Commission calling for a complete revolution of the city sewerage system at a cost of $6,000,000, in order that the two-million-dollar projects, the upper Milwaukee river park and the terminal station may be passed without opposition. Whether or not this is the case, many people are getting anxious for something definite to be done on the sewerage project. The report of the sewage commission, according to Ald. Victor L. Berger, will not only do away with conditions now existent in the Menomonee Valley, in which is located the heart of Milwaukee's manufacturing district, but will solve the sewerage problem in Milwaukee for the next 50 years.

Columbus, O.—The Wm. H. Conklin Co. has been awarded the contract for heating, plumbing and ventilating the Hartmen Theater building now in course of construction.

Toledo, O.—The American Warming & Heating Co. has taken the contract to install the heating and ventilating system in the new high-school building at Fremont, O. As soon as it is installed and in operation, W. A. Baker, president of the company, will conduct a number of people from other cities to inspect the work, which is a new system.

Columbus, O.—An ordinance has been passed by the city council authorizing the director of public service to advertise for bids and to enter into a contract for the construction of public-comfort stations in Livingston Park. The cost of the improvements will be about $2,700.

The 23rd Annual Convention of the New York State Association of Master Plumbers

Held in Rochester, New York, March 7th and 8th, 1911

Delegates to the 23rd annual convention of the New York State Association of Master Plumbers began to arrive in Rochester on Sunday, and by Monday evening most of the delegates were exchanging courtesies at the Powers Hotel, the convention headquarters.

At 10 o'clock Monday morning State President Frederick E. Fladd, of Rochester, convened the executive committee for the transaction of official business and to conclude arrangements for the convention. The committee was in session until 6 o'clock except for an hour's recess at noon for lunch. The following members of the committee were present: President Frederick E. Fladd, Rochester; Vice-president John H. Moran, Albany; Secretary Louis J. Yanchzi, Rochester; Treasurer Charles Campbell, Watertown; Messrs. B. J. O'Donnell, Syracuse; T. E. O'Brien, Brooklyn; John F. Rodgers, Flushing; John R. Sheehan, Schenectady, and Frank L. Beyer, Buffalo.

At the conclusion of the meeting the officers and visiting delegates accepted an invitation to visit the Bartholomay Brewing Co., where several hours were pleasantly spent. An appetizing luncheon was served at the conclusion of the entertainment.

The convention proper was called to order by State President Fladd at 10:30 on Tuesday morning, March 7th, in the large banquet hall of the Powers Hotel, the capacity of which was well taxed with the several hundred delegates and visiting plumbers present. The president complimented the association on the excellent attendance and in a few choice words introduced President Harry J. Bareham, of the Rochester local association.

President Bareham pleasantly greeted the delegates and announced the program of entertainment which his local had arranged to fill in the recesses between the sessions and for the several evenings, and invited all present to participate. He concluded by introducing the mayor of the city, the Hon. H. H. Edgerton.

The mayor, in cordially welcoming the delegates, said that he felt signally honored in being accorded an opportunity to address such a large and representative gathering of business men from all over the great "Empire State" and that he had by close observation and association with plumbers for about twenty-five years become thoroughly cognizant of their importance in their respective localities. In behalf of the city he gladly welcomed everyone present to a full measure of Rochester's well known hospitality and assured the delegates that there were no stone walls or locked gates within the city limits to bar their pleasure. He wished that the stay of each and every one would prove both pleasant and profitable and concluded by thanking the convention for its kind attention.

In his response, President Fladd in his usual happy manner thanked his honor for his generous expressions and welcome, and assured him that the delegates would not abuse the hospitality so generously offered.

The mayor then retired under proper escort and to the tune of "He's a Jolly Good Fellow," sung by the delegates with much enthusiasm.

President Fladd announced the presence of several prominent men of the trade and invited to the platform Mr. Samuel F. Wilson, of East Orange, N. J., secretary of the National Association of Master Plumbers, and Mr. William Young of New York, who was the first National State Vice-president of New York, requesting Messrs. T. E. Kerwin, of Albany, and Charles Kienzle, of Syracuse, to escort the former, and Messrs. Jos. Barr, of Rochester, and John Renehan, of New York, to escort the latter.

Mr. Wilson addressed the convention and announced that he was present to represent National President A. Selden Walker, of East Orange, N. J., who was detained owing to illness in his family. He extended the president's best wishes and regrets at being unable to be present in person and in an extended speech explained many things of interest connected with the national organization. Mr. Young, now a man well along in years but young in spirit, expressed his pleasure in being present once more with a local association which about twenty-three years ago he assisted in organizing.

President Fladd announced the following appointments:

Sergeants-at-Arms: George Bay and J. P. Hargarther, Rochester.

Credential Committee: Walter Cain, Buffalo; George Cropper, Binghamton; Edward MacDonald, Brooklyn; James Trainor, Jamestown, and George Cooper, Utica.

Jos. B. Gleason, of Rochester, chairman of the convention committee, announced that immediately upon adjournment the delegates would go to the street, where a group photograph would be taken, after which they would proceed in a body to the German Insurance building where luncheon would be served by the Builders' and Traders' Exchange in its rooms.

President Bareham announced that he had a very pleasant duty to perform in behalf of the Rochester local and concluded his remarks by presenting President Fladd with a handsome ivory gavel decorated with red, white and blue ribbons and surmounted with an engraved silver band.

In responding to this unexpected gift, President Fladd thanked the local and assured the members that the gavel would always remind him of this pleasant meeting and would be used with justice to all.

Former National President Hill, New York City, and former State President O'Donnell, Syracuse, were called to the platform and in their well known style addressed the convention on matters of moment to the trade.

Frank L. Beyer, Buffalo, moved that telegrams of sympathy be sent National President Walker and former State President Brown, both of whom were detained because of illness in their families. The motion was carried and so ordered.

Letters of regret were read by the secretary from many members of the trade.

Chas. H. Meitzler, Rochester, chairman of evening committee, announced that at the conclusion of the afternoon session tickets would be distributed for a theater party.

Wm. J. McDermott, New York City, past state president, was invited to the platform and made a scholarly address on the problems and needs of modern plumbing which elicited loud applause.

At noon a recess was taken.

Tuesday, March 7th, Afternoon Session.

The meeting reconvened at 2 p. m., President Fladd in the chair.

The report of the Credential Committee was received and adopted.

A telegram was read from Mr. I. J. Brown, thanking the convention for its telegram of sympathy.

President Fladd appointed the following as a Committee on Resolutions: J. L. Murphy, New York; Thos King, Newburgh; T. E. Clay, Syracuse; J. W. Sands, Brooklyn, and George L. Brucker, Utica.

On motion of Wm. J. McDermott it was ordered that all resolutions offered be read and then referred to the Committee on Resolutions without debate.

On motion of B. J. O'Donnell, Syracuse, a vote of thanks was tendered the Builders' and Traders' Exchange for its courtesy and entertainment.

The convention then went into executive session with Vice-president John H. Moran in the chair, and reconvened in open session at 5 o'clock. The report of the Legislation Committee, T. E. Kerwin chairman, was disposed of in executive session.

The committee of the whole reported back that it was resolved to oppose any bills in the legislature which were inimical and favor all measures which were for the benefit of the trade. Among the former is the Dawson bill to license journeymen plumbers and among the latter the Sullivan bill for the separation of plumbing in state, county and municipal contracts.

T. E. Kerwin, in behalf of the Albany delegation, presented President Fladd with a handsome framed portrait of himself which so surprised the gentleman that it was difficult for him to find words expressive of his gratitude.

The session then adjourned until 10 a. m. Wednesday.

In the evening the delegates were the guests of the local association at a theater party given at the Corinthian Theatre, and a general good time it proved to be.

Wednesday, March 8th, Morning Session.

The morning session of the second day's meeting was called to order by President Fladd at 10 o'clock.

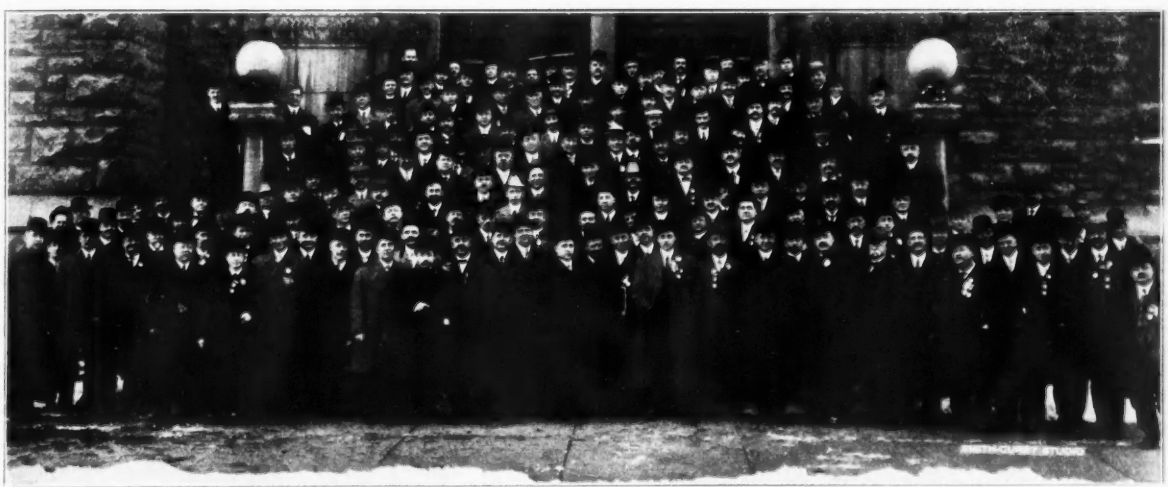
An Auditing Committee, consisting of Thos. S. Cochrane, jr., New York; Frank F. Schimpf, Albany, and John J. Kavany, Buffalo, was appointed by the president.

Treasurer Chas. A. Campbell, Watertown, and Secretary Louis J. Yauchzi, Rochester, read their reports, which showed the finances of the association to have been properly handled. The reports were referred to the Auditing Committee.

B. Jos. O'Donnell, Syracuse, National State Vice-president for New York, read his annual report, which briefly discussed matters of the National Association and referred to organization work in general.

A telegram from National President A. Selden Walker, East Orange, N. J., was read, which conveyed his sincere thanks for the sympathetic message sent to him yesterday and extended his best wishes to all present.

A communication received from the local association at Watervliet was read, which called attention to unsanitary plumbing conditions which exist in that city and to the need of an examining board of plumbers and an inspector for a proper correction of the unfavorable conditions and asked that the state association render all the aid in its power to correct the evils. After a thorough discussion it was resolved that the Executive Committee verify the complaints and take all possible means to aid the Watervliet Association in its effort to provide a sanitary system governing plumbing there.



Delegates Attending the 23d Annual Convention of the New York State Association of Master Plumbers, in Rochester, N. Y., March 7 and 8, 1911.

George S. O'Neil, East Orange, N. J., president of the New Jersey State Association of Master Plumbers, who arrived in town Tuesday evening, was invited to the platform and addressed the convention in a happy vein. He expressed his pleasure in being able to attend the convention and gave a good account of the work accomplished and under way in his state.

T. E. Kerwin, Albany, chairman of the Legislative Committee, called attention to another legislative measure which was of interest to the New York City members, an act providing for the appointment of a city architect, introduced in the state legislature by Assemblyman Foley and known as Bill No. 147. It was resolved that the Legislative Committee be authorized to favor the bill.

T. E. O'Brien, Brooklyn, suggested the advisability of making a thorough investigation of the mechanics' lien law of this and other states, with a view to preparing and introducing in the next legislature, if not sooner, an amendment to the present unsatisfactory law. After considerable discussion the matter was referred to the Legis-

lative Committee with instructions to introduce such needed legislation.

The hour of noon having arrived a recess was taken for lunch, to reconvene at 2 p. m.

Afternoon Session, Wednesday, March 8th.

The final session of the convention was called to order by President Fladd at 2:30 p. m. and immediately went into executive session to hear the reports of the president, the Executive Committee and the Committee on Resolutions. Vice-president J. H. Moran, Albany, presided at the executive session.

Open meeting was resumed at 4:45, President Fladd in the chair.

It was reported that new local associations had been organized at Dunkirk, Port Chester and Geneva, the present membership of the state association being 1,185.

The matter of engaging the services of an executive clerk was referred to the Executive Committee, with power to act.

Election of Officers.

President Fladd appointed Chas. Geiger, Buffalo; J. W. Sands, Brooklyn, and Chas. A. H. Kienzle, Syracuse, as tellers. The election of officers resulted as follows: President, John H. Moran, Albany; vice-president, Frank B. Lasette, New York; recording and financial secretary, James H. Doody, Albany; treasurer, Chas. A. Campbell, Watertown; national vice-president, B. J. O'Donnell, Syracuse; delegates-at-large, Frank L. Beyer, Buffalo; George L. Brucker, Utica; T. E. O'Brien, Brooklyn; John R. Sheehan, Schenectady, and Louis J. Yauchzi, Rochester.

The matter of selecting the next place of meeting was referred to the Executive Committee with power.

The thanks of the convention were extended to the Rochester local and the citizens generally for all courtesies; to the retiring state officers for their untiring services so well executed, and to the trade and local press.

The matter of selecting a fitting testimonial for presentation to the retiring president and secretary was referred to the Executive Committee with power.

There being no further business, the convention adjourned amid a feeling of general good-fellowship, which spirit characterized all the sessions and functions of the convention.

Banquet.

The banquet given by members of the Rochester Master Plumbers' Association in honor of the visiting delegates was a most pleasing success. It was held in the banquet hall of the Powers Hotel on Wednesday evening at 8:30 o'clock. The menu was a most elaborate one and it met with the hearty approval of every one who was fortunate enough to be in attendance. Harry J. Bareham, president of the Rochester association, presided as toastmaster, and he fulfilled his duties in that capacity in a most happy manner. Among the speakers were: Judge John D. Lynn, of Rochester; Rolland B. Woodward, secretary of Rochester Chamber of Commerce; Fred E. Fladd, retiring president of the N. Y. State Association of Master Plumbers; S. M. Wilson, secretary of the National Association of Master Plumbers; B. Joseph O'Donnell, national state vice-president; John H. Moran, of Albany, the new president of the association; and Past National President T. A. Hill, of New York City.

Delegates in Attendance.

The Credential Committee's report showed the following delegates in attendance:

Delegates ex-officio: Past state presidents: J. A. Rossman, New York City; Charles Geiger, Buffalo; Wm. J. McDermott, New York City; B. F. Donohue, New York City; F. L. Beyer, Buffalo; B. Joseph O'Donnell, Syracuse; John E. Dugan, Albany; Charles B. Huck, Buffalo; John A. Creelman, Rochester.

Albany: Albion J. Eckert. Frank F. Schimpf. Timothy E. Kerwin. Thomas F. Nolan.

Auburn: D. A. Donovan. John Holihan.

Avoca: Walter H. Wood.

Binghamton: William Ciddell. V. W. Hadley. George Cropper.

Borough Bronx: Peter Schweikert. Frederick Weber. Walter Wilcox. N. J. Flynn. George A. Knauss.

Brooklyn: John W. Sands. James T. Keenan. Thomas E. O'Brien. Edward Mac Donald. James Jarcho. William Eiermann. M. J. Kennedy. Ignatius P. Byrnes. Harry Voletsky. M. J. McGrath. G. F. Treacey. P. H. Gleason. Edward Belford.

Buffalo: Walter H. Caines, president. John B. Green. Jerome W. Cline. William W. Ebbs. Harry J. Miller. George H. Drake. Thomas J. Kavany. John J. Kavany. James J. Breshanan. August Ebke.

Cohoes: James Rosmond. James H. Golden.

Despatch: E. A. Young. C. H. Derby.

Geneva: Adam Emig. Minette: E. B. McCarthy.

Newark: B. Fanning. Newburgh: Thomas King.

New York: A. S. Gaynor. G. O. Shumway. Isaac J. Brown. B. A. Buge. A. H. Brown. Philip Brady. Thomas J. Cummins. T. S. Cochrane. George H. Creasey. David Deigan. Jere J. Delaney. Philip Eich. F. J. Fee. T. A. Hill. Gus Hansen. J. R. Hopkin. John J. Hannegan. A. E. Jackson. James P. Knight. F. B. Lasette. James S. Lawlor. James D. McEntee. Thomas F. McCaul. Francis McNamara. Cuno Miller. Jere L. Murphy. M. J. O'Brien. Frank Reynolds. John Renehan. John Smith, No. 1. James Smith. Herbert Smith. Thomas J. Tuomey. William Young.

Queens.—Bronx: George Cross. P. P. Scott. John F. Rogers. A. Williams. F. X. Meier. F. B. Robertson.

Niagara Falls: Joseph G. Riley.

Nyack: A. L. Henry.

Oneonta: C. W. Herrick.

Oswego: Michael B. Crawford. Thomas M. Hennessy. Thomas Keefe.

Port Jervis: John D. Swinton. John J. Toth.

Rochester: George H. Caffrey. Erwin Goodenough. Herbert Saunders. Anthony Heinzle. John Hargarther. Harry Bareham.

Schenectady: C. F. Shanks. J. R. Sheehan. Leroy Larned.

Syracuse: John Lavelle. James F. Guider. Aug. Schall. Charles A. H. Kienzle. Fred W. Soper. Timothy X. Donovan.

Tannersville: Louis Allen.

Troy: William F. Quinn. George T. Morris. Arthur A. Dunn.

Utica: M. A. Cooper. J. B. Wittie.

Watertown: A. C. McCrady. J. J. Lewis.

Supply Men in Attendance.

The H. Mueller Mfg. Co., of Decatur, Ill., and New York City, was represented by O. B. Mueller and R. M. Hastings, who received their many friends in Room 115

in the Powers Hotel, where they had an attractive exhibition of some of the Mueller products, such as the Uni-Joint bath supply, a self-closing drinking water cock, calking tools, reamers, trap screw ferrules, etc. Handsome booklets entitled "Save Ye Waste" and "Colonial Plumbing Goods" were distributed.

The H. E. Hessler Co., Syracuse, N. Y., manufacturer of the McGuire adjustable Star roof flange, was ably represented by the inventor, J. McGuire. To ensure reflection on the merits of the Star flange, Mr. McGuire dealt out pocket-mirrors encased in leather, accompanied by leaflets setting forth in detail its advantages.

The Ideal Carriage Washer & Automatic Water Saver Co., of Rochester, exhibited its Auto-Silent water-closet valve and combinations. E. P. Gaylord, who was in charge of the display, showed the interior construction of the valve by means of a sectional view. He also had a booklet for distribution, illustrating the numerous combinations made by his company.

The Charles Millar & Son Co., of Utica, N. Y., was represented by Walter M. Winn.

The Thompson Iron Works, Philadelphia, had William W. Thompson on the ground.

O. W. Rice, of the Edward J. Rice Mfg. Co., Rochester, extolled the merits of the Rice cast-iron water-closet bend, using a booklet showing two types of the bend with full description.

The Peerless Selling Co., Evansville, Ind., had W. H. Fifield to look after its interests.

The Trenton Potteries Co., Trenton, N. J., was represented by Billy Bapst.

The Monarch Brass Co., Cleveland, O., sent E. A. Morse to keep its interests before the delegates.

The Hunting Co., of Watertown and Rochester, N. Y., had G. D. Price in attendance.

The John Douglas Co., Cincinnati, O., was represented by Francis N. Hoeffer.

The E. Jenks Brass Co's. interests were in the hands of W. P. Dutsch.

Samuel Sloan & Co., of Rochester, were ably represented by their popular buyer, Harry S. Welsh.

THE ABOLITION OF DRINKING-CUPS.

By Edward C. Stover, Trenton, N. J.

Owing to the spreading of disease germs by means of drinking-cups, the days for their use in schools and public places generally are numbered.

In a recent microscopic examination of a drinking-glass in a public school, it was estimated that not less than 100,000 bacteria were present on every square inch of the glass.

The recent developments in vitreous china bubbling-devices for use in all public places, in connection with drinking-fountains generally, whereby the lips do not touch anything but the water, preclude the possibility of passing or spreading germs or disease of any kind.

The question is of such widespread and vital importance, and the remedy is so simple and inexpensive (as numerous effective types of jet and bubbling-cups are now on the market, devised and made by the various manufacturers, and can be furnished by every plumber and dealer in the land), that I would suggest that this, one of the most important questions of health and sanitation, be not only discussed, but definite action be taken at this meeting of our association, and to accomplish this would offer two resolutions:—

First.—The American Society of Inspectors of Plumbing and Sanitary Engineers, at its sixth annual convention held at Milwaukee, Wis., February 6-8, 1911, do advise that in all public schools and in all other public places, the old form of drinking-cups be abolished and their use be immediately discontinued.

Second.—That in public schools and all other public places, where drinking-water is furnished, both in old as well as new construction, the members of this society do advise the prompt provision of some form of jet or bubbling-cup drinking-fountains, preferably of china, that supply fresh drinking-water not contaminated in any way by the former users, as the best sanitary method of protecting the health and lives of users of said public drinking-fountains.

If the above resolutions are adopted it would probably be well to recommend that they be published broadcast and copies be sent to all boards of health and all school boards in the United States.

*Read before the sixth annual meeting of the American Society of Inspectors of Plumbing and Sanitary Engineers, held in Milwaukee, Wis., Feb. 6, 7 and 8, 1911.

E. R. PIERCE'S HOME IN BELFAST, ME., DESTROYED BY FIRE.

Early on the morning of March 7th, fire almost totally destroyed the Colonial homestead at 36 High St., Belfast, Me., owned and occupied by Edward R. Pierce, author of "A Practical Manual of Steam and Hot-Water Heating," now appearing in "Domestic Engineering." Everything above the second floor was lost, including the entire wardrobes and jewelry of Mr. and Mrs. Pierce, much valuable mahogany and Chippendale furniture, many articles treasured for their rarity and associations, and Mr. Pierce's library. This contained over 400 volumes, many rare scientific treatises and manuscripts, his note-books, and a fine stereopticon with several hundred slides collected in years of travel all over the country. Fortunately, the last copy for the series now running in these columns, had been forwarded to "Domestic Engineering." Mrs. Pierce is an artist of much talent, a graduate of the Boston Art School and a member of the American Federation of Artists. She used three rooms for studios and headquarters for the Belfast women who are interested in arts and crafts work. Mrs. Pierce is to be congratulated that nearly all the contents of the studios, including many pictures which have been exhibited, were saved. Having entertained friends, Mr. and Mrs. Pierce were late in retiring and smelled smoke but were unable to find any sign of fire. About 3 a. m. Mrs. Pierce opened a kitchen door and in a moment a sheet of flame seemed to spread through the house up to the second floor and roof. It is one of the ironies of fate that an expert on heating questions should lose his home by a fire over which he could exercise no control. Aside from the actual loss, the house was valued for its age and associations. Built in 1805, the original features had been restored and kept as nearly intact as possible through all repairs. It has descended in direct line to Mr. Pierce from Capt. James Miller, who bought it from its builder, Col. Cunningham. During the war of 1812 it was a noted tavern and many distinguished guests, including judges of the Massachusetts Supreme Court, were entertained there. While the house might be rebuilt for $5,000, four times that amount would not cover the property-loss, aside from the fact that many articles cannot be replaced at any price. The insurance covered only the nominal value of the home.

No Repetition.

"How often does your road kill a man?" asked a facetious traveling salesman of a Central Branch conductor the other day.

"Just once," replied the conductor.—Kansas City Journal.

MODERN PLUMBING IN GERMANY

By Frederich Wollner, S. E., Dresden

At last I have gained a few hours' time to get the article I have promised you months ago in shape to fit the printing press. We have been hustling all through these past months and there will be some more to do in the near future. Thus I might as well invite my readers today to follow me on the way to a nearby town to enjoy the sight of a most wonderful combination of architectural art and modern convenience.

To get to our place of destination, we shall pass through the cleanest street of a city you ever laid your eye on, and board a boat on the River Elbe, bound for Wachwitz, a suburb of Dresden. It is a delightful trip up the river. To our left hills and castles, soon we pass underneath what one may call the German Brooklyn Bridge at Loschwitz, a very interesting scenery, as shown on the accompanying illustration (Fig. 1).

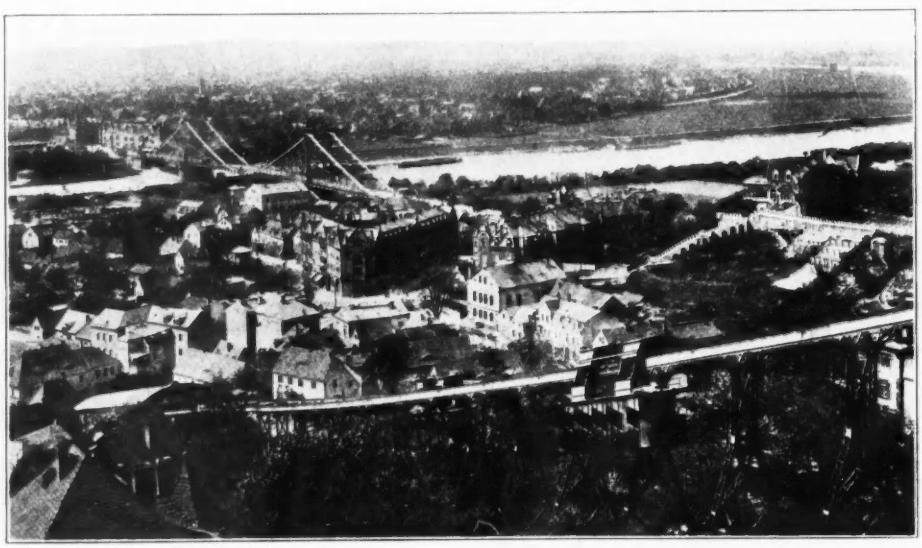


Fig. 1. The River Elbe, near Dresden, Showing the German "Brooklyn Bridge."

After a little over a half an hour's ride, our boat follows the curve of the river to our left we behold half way up the hill, amidst an old shady park, the mansion of Sir Robert Wollner. Its outlines and details bear the marks of its creator's hand, the famous architect, Prof. William Kreis, Dresden Duesseldorf. Five minutes' walk from the boat station and we are in front of the building (Fig. 2), a landmark quickly known by anybody in this section of the country Saxony. We now turn to the left again to gain the entrance on the west side of the mansion and enter the building on the main floor (Fig. 3). There are five floors in all, including basement and a roomy garret (Figs. 4, 5, 6).

To the right and left of the vestibule are wardrobes, one for ladies and one for gentlemen, each having adjoining toilets. Passing on, we enter the main hall with marble floor, arched ceiling and the walls parted into fields by carved columns of shell limestone. The hall is of distinguished design and color, as is every room we may turn to. There is a smoking room, a billiard room, a room for ladies, a big parlor and next to it, a winter garden. The latter is a charming place to sit and chat while a fantastic dragon bent over a lotus flower (a Japanese bronze, Fig 7), throws water into the granite basin, and while the mountains of the "Sachnische Schweiz" can be seen in the distance. We turn back now to see the dining-room with its costly furniture of citron-wood. Through a smaller door we step into the pantry fitted up, besides the different closets, with a pantry sink made of German silver and a plate warmer. From this pantry a stairway leads down to the butler's pantry adjoining the roomy kitchen of which one corner with some fixtures is shown in our illustration (Fig. 8). We are on the basement floor (Fig. 4), containing also the laundry and (Fig. 9) servants' dining-room, several storage-rooms, wine-cellar and the boiler-room. There are two hot-water heaters for an overhead hot-water heating plant; heater and a 250 gallon boiler for hot water supply, and all the cold water shut-off valves. All the risers run up through the house from this room. Two stairways and an electric dumb-waiter run up from the basement to the top

floor. The main stairway leading up from the main hall to the second floor has marble steps, and the balustrade-like rail is built in stone of the same kind as is used in the main hall. Design, material and color form a very rare piece of work.

Fig. 2. Front View of Robert Wollner's Villa.

The second floor (Fig. 5) consists of four apartments, two for the ladies, one for the master of the house, and a guest's apartment. There are three complete bathrooms, of which the accompanying illustrations (Figs. 10a, 10b, 11 and 12) may give you an idea. From madame's apartment, we may step out

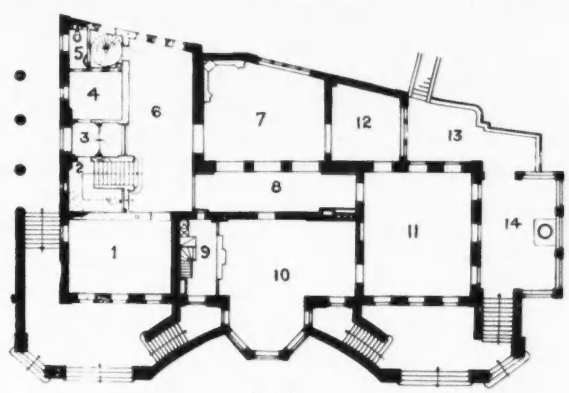


Fig. 3.

1. Smoking-room. 2 and 5. Toilet-rooms. 3. Vestibule. 4. Ladies' Wardrobe. 6. Main Hall. 7. Billiard-room. 8. Hall. 9. Pantry and Dumb-waiter. 10. Dining-room. 11. Parlor. 12. Ladies' Room. 13. Balcony. 14. Winter Garden.

on the balcony on the main front and enjoy the sight of a most fascinating scenery. At your foot the peaceful village Wachwitz lies and like a silver ribbon the River Elbe, busy carrying up and down its back freight and passenger boats. Across the water we overlook a wide valley with numerous villages, and the "Erzgebirge" mountains in the far background. Southeast are the picturesque steep mountains of the Swiss of Saxony.

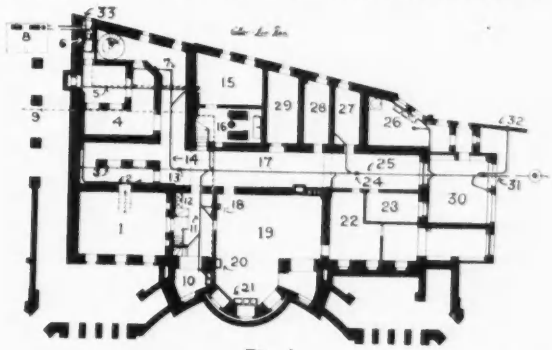


Fig. 4.

1. Wine-cellar. 2 and 5. 4-in. Soil-pipes. 3. 3-in. Sewer-pipe. 4. Storage-room. 6. Main Trap. 7. Cleanout. 8. Vault. 9. 2-in. Water-main. 10. Butler's Pantry. 11 and 14. 4-in. Sewers. 12. Dumb-waiter. 13. Cleanout. 15. Coal Bin. 16. Boiler-room. 17. Hall. 18. Slop-sink. 19. Kitchen. 20. Vegetable-sink. 21. Tubs for Dishwashing. 22. Servants' Dining-room. 23, 27 and 28. Storage-rooms. 24. Cleanout. 25. 5-in. Sewer. 26. Laundry. 29. Cellar 30. Entrance to Basement. 31. 5-in. Main Trap. 32 and 33. Fresh Air Inlets.

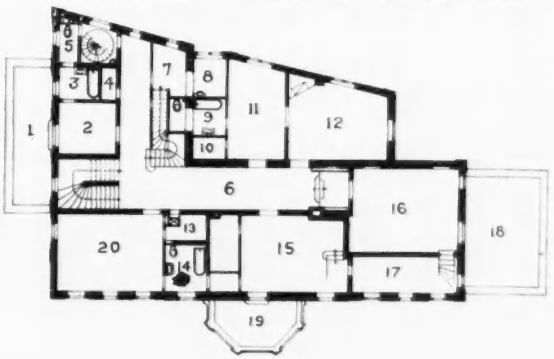


Fig. 5.

1. Balcony. 2. Guest Apartment. 3, 9 and 14. Baths. 4 and 10. Closets. 5. Toilet. 6. Hall. 7, 8 and 11. Bed-rooms. 12. Sitting-room. 13. Dumb-waiter Closet. 15. Madame's Apartment. 16. Sitting-room. 17. Library. 18 and 19. Balconies. 20. Master's Room.

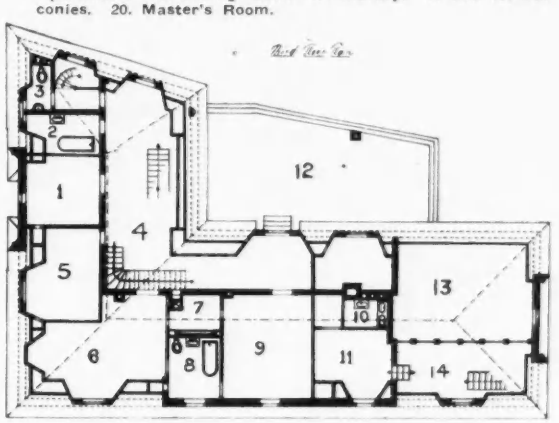


Fig. 6.

1 and 5. Servants' Rooms. 2. Servants' Bath-room. 3. Toilet. room. 9. Guest-room. 10. Studio. 11. Dark-room. 12. Bal- 4. Hall. 6. Children's Room. 7. Dumb-waiter Closet. 8. Bathcony. 13. Garret. 14. To Sitting-room Below.

There to the west, it seems within a stone's throw, are the towers and steeples, cupolas, countless roofs and the bridges of dear old Dresden; beyond the city, the hills and slopes adding

Fig. 7. A Japanese Bronze.

to the beauty of the western part of the country. Our eyes have traveled a great distance but they don't get tired in going over the scenery again and again. It is an ideal landscape to look upon, an ideal place to live, not in the least because every modern convenience was put into the building, which is, with regard to the outlaying of the rooms, similar to a fine American residence, as shown by the different floor-plans. The kitchen, butler's pantry and laundry on the basement floor, another pantry next to the dining-room, the dumb-waiter, built-in closets, the complete bath-rooms next to the bed-rooms, etc., are typical features of an American home. There are electric light and bells, telephone, gas, a hot-water heating plant, even a vacuum-cleaning system put into the house, and of course, good plumbing, the best plumbing that was ever put into a house in Germany. The plans and photographs may prove it. This job was done by Gebrueder Wollner, Dresden, according to the rules and regulations for plumbing in the city of New

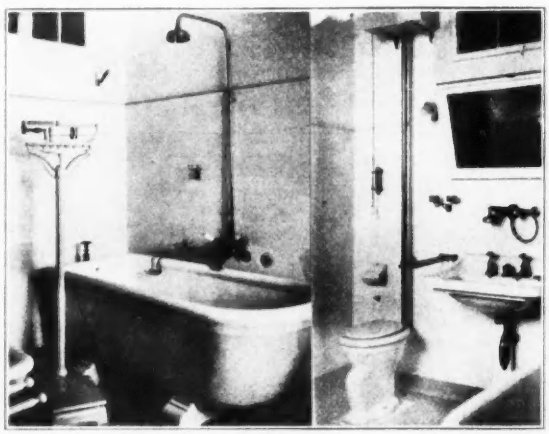


Fig. 10 b. Fig. 12.
Corners of Two Bath-rooms.

York. The sanitary condition of the work will stand comparison with work done in fine private residences in the United States. Only the best and heavy material was used; all lead work wiped, every fixture properly trapped and vented, hot and cold water supplied. The soil and waste pipes, in fact the whole

Fig. 8. A Corner of the Kitchen.

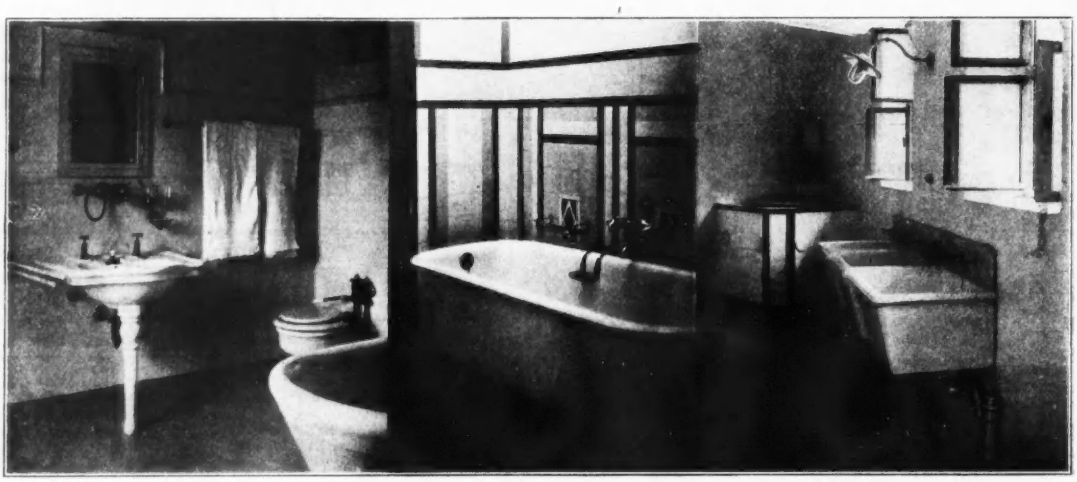


Fig. 10 a.
A Prompto Closet-bowl.

Fig. 11.
Bath-room.

Fig. 9.
Laundry.

system was, after completion of the roughing, filled up with water and thoroughly tested. No other plumber nor inspector here had ever seen such a test. To plug the pipes, we used Climax testing plugs, made by the Kemp Mfg. Co., Baltimore, U. S. A. Some private and government architects and the sewer inspector of Dresden had been invited to look the work over. They were pleased to see real plumbing, and no doubt it inspired them to help improving sanitary conditions at large.

The advantage accomplished by having the traps vented and the system brought in connection with fresh air-pipes had to be explained to the gentlemen, as it is not customary to run such pipes in Germany. Only in the city of Hanover do the plumbers have to provide some sort of back-air pipes. Looking at the basement floor-plan, the reader will notice two sewers, each one connected with a fresh-air pipe. One sewer carries away the waste water from closets only, the other from the rest of the fixtures. This arrangement is due to an

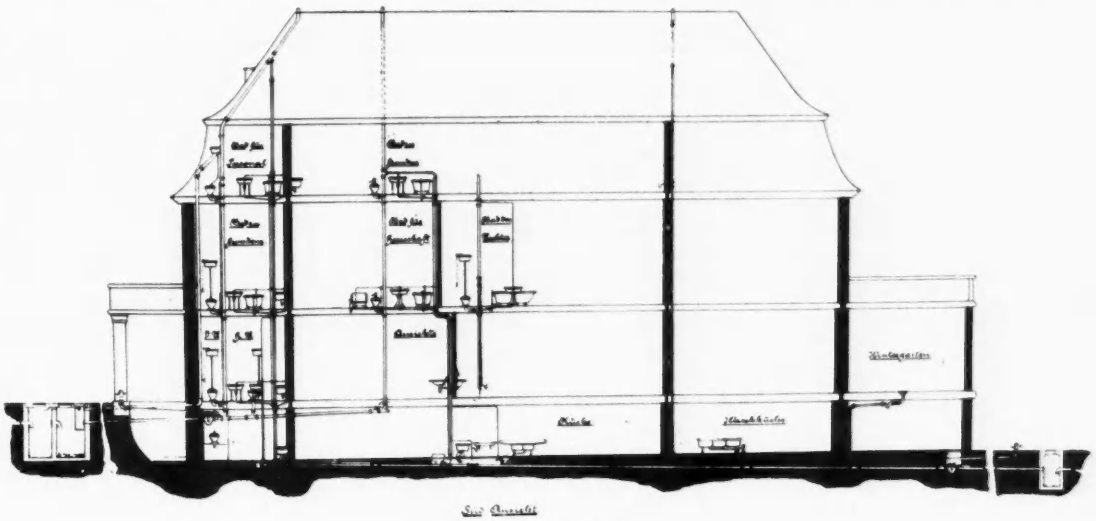


Fig. 13. South Elevation.

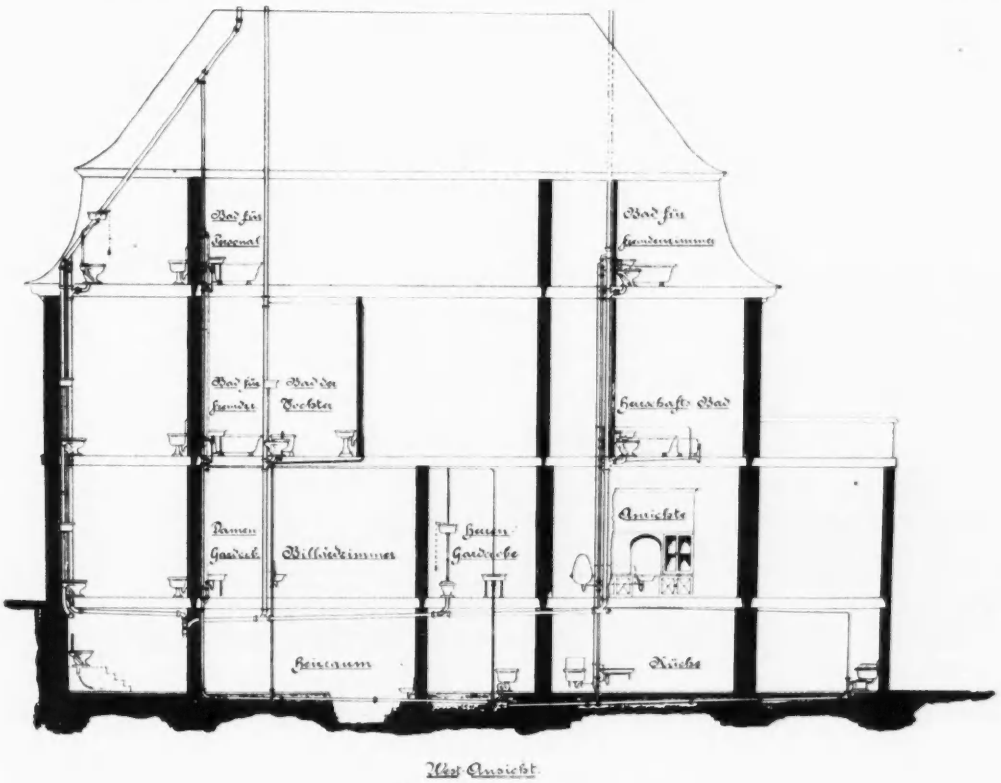


Fig. 14. West Elevation.

ordinance of the village which says: "No water from closets is allowed to be disposed of through the public sewer into the river in order to avoid pollution of the stream." The water from the closets is run to a vault (Fig. 13) and used by the gardner in the large park and vegetable garden. The other waste water is cleared in a cesspool over 100 feet away from the house and disposed of by the main sewer (Fig. 13 on the right side).

There are five bath-rooms; in all 35 fixtures for various purposes, including the fixtures in the kitchen, pantries, wardrobes and the sinks for waste water on the different floors. A very expensive fixture is the water closet shown in the illustration (Fig. 10a). It is a Motts Prompto siphon closet-bowl with direct acting concealed jet and sanitary screw connection, set on a marble slab. We imported the bowl through W. S. R. Goebel, Leipzig. All the rest of the closet-bowls are set on marble slabs (Fig. 12) and connected to the lead-bend by a brass flange and bolts. This is never done here, even in the best buildings. The bowls are of the siphon-jet hopper type. The tanks are of oak, painted white with enamel paint, lined with tinned sheet-copper and set on nickel-plated brackets. All

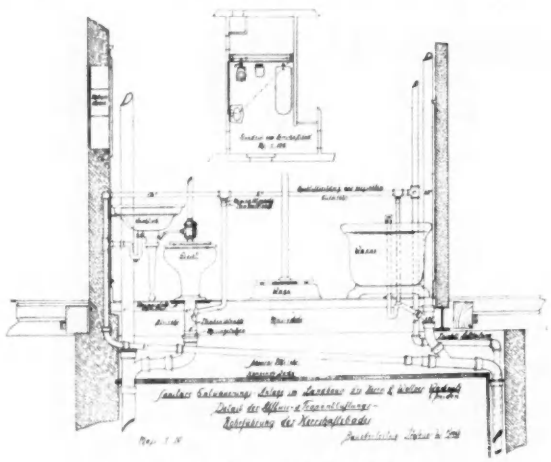


Fig. 15. Sectional View of Plumbing System.

trimmings are made of red metal, those which are visible nickel-plated. As careful as the roughing-in (Figs. 13, 14, 15) was done, so careful was the installation of the fixtures. There is no toolmark left on the nickel-plated trimmings, and because my strap wrench, a tool not known to the German plumber, came and is coming handy on this kind of work. It is a job where we could show how plumbing should be done, and with this point in view we did not mind to spend time, money and a bunch of trouble to get a hundred different things specially made to order, even a number of closet-bowls with screwed flush-pipe connection. The bowls sold here have simply a horn, and the bended lead flush-pipe is connected to the bowl by a rubber connection.

I mention a few more things we had to get specially made: Main house-traps, sanitary T Y's, tapped T's and funnels of different sizes, 4-in. lead-bends, all the valves, closet-tanks including the outfit, flush-pipes, escutcheons, etc. Now somebody may ask, who has been doing the work? Of course, nobody else but myself, a journeyman and a helper. I had to show these people how to caulk a joint of a cast-iron waste-pipe so it will stand the test. They have never done it before, although they know how to caulk the joint on water-mains in the street. Waste-pipes are not tested here and therefore the plumber is careful in caulking those joints. Funny to say, but nevertheless true, every piece of supply-pipe that is put into a house is tested by an inspector with double and triple the amount of pressure the pipe has to stand ordinarily and, of course, a slip is made out and some money collected for this so very "important and protective" job. Time will come when we will get on the higher standard, but it may take half a century yet; in the meantime we have to do as good as we can, wherever there is a chance advocating the principles of sanitary plumbing. The international exhibition "Hygeia," Dresden, May till October, will give us a welcome opportunity.

That we are recognized as plumbers who understand their trade is shown by the list of jobs we have completed; besides a lot of private jobs, nearly 30,000 marks worth of work for the city of Dresden. Among the jobs we have booked at present is a high school in a nearby town and the installation of all the plumbing fixtures in the new Hotel Imperial at Carlsbad, the town famous for its hot mineral springs. This hotel will contain 88 complete bath-rooms, each one containing four fixtures—a porcelain built-in bath tub, a porcelain wash-stand, a vitreous china closet-bowl with low tank and a bidet. There are about 50 urinal stands to be put up and a lot of sinks and other fixtures. There is a chance for a couple of journeymen plumbers to help tackle the job, those who master the German language preferred. The hotel will be opened in the spring of 1912.

I am pretty sure that there will be no grass growing under our feet this year, but I think I will find time yet to write another article concerning the work we did in the new slaughter-house plant. In the meantime I wish my fellow-tradesmen a prosperous summer.

CONVENTION DATES.

March 21 and 22, 1911.—The annual convention of the Indiana State Association of Master Plumbers, at Vincennes, Ind., with headquarters at the Grand Hotel. The Board of Directors will hold a meeting, also at Vincennes, on March 20th, the day before the convention. The officers of the association are: President, C. H. Maloney, Gary; vice-president, Joseph Hayes, Indianapolis; secretary, John B. Burke, Gary; treasurer, A. E. Werkhoff, Lafayette. Directors: John O'Rourke, Ft. Wayne; A. C. Bennett, Kokomo; A. J. Weinhardt, Terre Haute; Edward Kanney, La Porte; W. H. Meerhoff, Richmond; Adolph Lindeman, H. G. Newman, Evansville.

March 23, 24 and 25, 1911.—The 14th annual convention of the Montana Master Plumbers' Association, at Gregson Springs, Mont. The officers of the association are: President, Walter Forbes, Butte; secretary-treasurer, D. H. Budd, Bozeman.

April 5 and 6, 1911.—The 19th annual meeting of the Michigan Association of Master Plumbers, at Muskegon, Mich., with headquarters at the Occidental Hotel. The officers of the association are: President, W. J. Dowsett, Jackson; vice-president, Thomas J. Shields, Lansing; secretary and treasurer, W. A. Decker, Grand Rapids, Mich.

April 11 and 12, 1911.—The annual convention of the State Association of Master Plumbers of Kentucky, at Frankfort, Ky. The officers of the association are: President, Jacob Isaacs, Louisville, Ky.; vice-president, J. J. Fitzgerald, Lexington, Ky.; secretary-treasurer, Geo. F. Roser, 308 S. Third St., Louisville, Ky. Board of Directors: H. L. Nevins, Louisville, Ky.; Ed. Hannon, Paducah, Ky.; J. H. Adams, Harrodsburg, Ky.

April 18, 1911.—The annual convention of the Pennsylvania State Association of Master Plumbers, at Johnstown, Pa. The officers of the association are: President, S. S. White, Pittsburgh; first vice-president, C. K. Will, Lancaster, Pa.; second vice-president, Robert Purse, Johnstown, Pa.; third vice-president, D. F. Durkin, Jr., Philadelphia; treasurer, John H. Birchall, Allentown, Pa.; secretary, R. E. Carson, 1827 Perrysville Ave., Pittsburgh.

April 20, 1911.—The annual meeting of the Northwestern Association of Master Plumbers, at Saegerstown, Pa. This association is composed of master plumbers in Eastern Ohio, Western New York and Western Pennsylvania and its officers are: President, L. R. Stone, Greenville, Pa., and secretary, M. C. Judd, Meadville, Pa.

The Proposed Cleveland Plumbing Code

Cleveland, O., has long been known as a vigilant city in regard to sanitary conditions. The master plumbers and journeymen plumbers of Cleveland for several years have not been satisfied with the existing code. Four years ago individual plumbers began a tentative revision of the code, and these individual efforts resulted in the appointment of a committee, consisting of five master plumbers and five journeymen plumbers, for the purpose of a complete and concerted revision of the code. No plumbing code has ever received more prolonged attention. It was presented to the Ohio State Association and declared by that association superior to the existing code. Cleveland plumbers have implicit confidence in its excellence and will be glad to have your commendation or criticisms of this code in the columns of "Domestic Engineering." It is presented to you in two sections. The first was published last week and the conclusion follows herewith. Study the points in which you are interested. We will be glad to hear from you and publish your comments on the features upon which you agree or disagree in special fashion.

TITLE VIII.

YARDS, SUB-SOIL AND OTHER DRAINS.

Sec. 1120-125. Drainage of Yards and Areas.—All paved areas, yards, courts, courtways and court-yards shall be drained to the house drainage system when practicable. When drains used for this purpose are connected with the house drain each shall be effectually trapped.

Sec. 1120-126. Yard Drain Traps Omitted.—Each inlet to a yard drain need not be separately trapped if the drainage line to which they connect is controlled by a single trap before connecting with the house sewer, or connects directly with a sewer intended to carry surface water only. The top of the heel of the bend of untrapped yard drains or house drain extensions through open paved areas or courts shall be not less than two (2) feet below the top of the pavement, provided that the top of such pavement is at least three (3) feet below the grade at the building line.

Sec. 1120-127. Sub-soil Drains.—Where sub-soil drains are placed under the cellar floor of any building, said drains shall be constructed of open jointed four (4) inch drain tile and connected to a water tight catch basin, covered with stone, flag or iron cover. Where it is desirable to connect to the house drain or sewer and there is not a constant and sufficient supply of water such catch basin shall be located outside of the building.

The outlet pipes of said catch basin shall be properly trapped and connected with the house drain or sewer. Said outlet pipe shall be of iron, provided with a back pressure valve.

Sec. 1120-128. Sub-soil Drain Encircling Walls.—In the case of a sub-soil drain encircling the outer walls of a building the drain and each branch of such drain shall discharge through a trap, preferably a down spout or roof leader trap, or it may be connected to a cellar sub-soil catch basin before it connects with the house sewer.

Sec. 1120-129. Sub-soil Drains Below Sewer Level.—Sub-soil drains below the main sewer level shall discharge into a sump or receiving tank, the contents of which shall be automatically lifted and discharged into the drainage system above the cellar through some trapped receptacle.

is a sufficient intake of water.to insure a permanent water seal shall not be less than three (3) inches in diameter. Such drains shall be provided with traps with clean-outs on inlet side of trap. Both ferrule and screw cap shall be of brass and each such clean-out ferrule shall be provided with a detachable threaded or hinged brass strainer underneath the screw cap.

Sec. 1120-131. Floor Washes—Open Connections.—Cellar drains or floor washes with an open connection shall be permitted to be used only where absolutely necessary and where there

Sec. 1120-130. Floor Washes.—Cellar drains or floor washes in the traps.

Sec. 1120-132. Stable Racks.—No wash rack, when the washings carry sediment or solids, shall be connected to any sewer without a suitable catch basin.

Sec. 1120-133. Exhaust, Blow-off and Drip Pipe Connections.—No steam, exhaust or drip pipe under pressure shall be connected into the house drain or any of its branches. All such pipe shall be made to discharge into a properly made cast or wrought iron closed blow-off tank, that shall be fitted with a trap having water seal 24 inches deep. A vapor or relief pipe of ample size shall be carried from the tank to chimney stack or above roof for escape of steam.

Sec. 1120-134. Hot Water Discharge Prohibited.—Water over one hundred and forty (140) degrees Fahrenheit shall not be allowed to enter any house, drain or street sewer.

Sec. 1120-135. Low Pressure Steam Drain Connections.—Connections for the drainage of a low pressure steam or hot water heating system may be made into a properly trapped sink, cellar, or floor drain.

Sec. 1120-136. Elevator-Connections.—All direct connected hydraulic elevators, lifts or pressure machines shall be provided with sewer outlet one size larger than the discharge opening of said machine and be properly trapped.

TITLE IX.

ROOF CONDUCTORS OR LEADERS.

Sec. 1120-137. Conductors.—The conductors or roof leaders and the surface and ground water drains, wherever possible, shall be connected with a sewer.

Sec. 1120-138. Inside Conductors or Roof Leaders.—When placed within the walls of any building or run in an inner or interior court, or ventilating or pipe shaft, all conductors or roof leaders shall be constructed of extra heavy cast iron soil or galvanized wrought iron pipe.

Sec. 1120-139. Roof Connections.—Roof connections on inside conductors with the roof gutter, shall be made by means of a brass ferrule and copper or lead pipes or flashings, and made water and gas tight. The mouth of the conductor shall be made funnel shape and the inlet protected with a brass wire basket, but no such connection shall be made on roofs enclosed within parapet walls unprovided with overflow outlets through parapet walls of sufficient number and size to drain roof in the case of obstruction to conductor inlets.

Sec. 1120-140. Conductor Pipes Trapped.—Every conductor pipe shall be separately trapped and provided with a cleanout except when two or more conductors are run into the same branch of a house drain without an intervening soil or waste pipe, in which case but one trap need be used.

Sec. 1120-141. Size of Conductors.—The size of the conductor pipe shall be determined by its horizontal run and the roof area drained, but no diameter of an inside conductor shall be less than three (3) inches if of cast iron, or less than two (2) inches if of galvanized iron or brass. No house drain roof leader branch shall be less than three (3) inches in diameter. Outside vertical conductor pipe exposed to frost shall be at least one size larger than the required dimensions of a corresponding inside pipe.

Sec. 1120-142. Connections with Conductors Prohibited.—Conductor pipes shall not be used as soil, waste or vent pipes, nor shall any soil, waste or vent pipes be used as conductors.

Sec. 1120-143. Defective Conductor Pipes.—When an existing sheet metal conductor pipe within the walls of any building becomes defective, such conductor shall be replaced by one which conforms to this Code.

Sec. 1120-144. Outside Conductors.—When the outside conductors or down spouts of sheet metal are connected with the house drain, they shall be so connected by means of not less than one length of extra heavy cast iron pipe extending vertically at least four (4) feet above the grade level. Along public driveways without side walks they shall be placed in niches in the walls protected by wheel guards, or enter the building through the wall at forty-five (45) degree slope at least twelve (12) feet above the grade.

Sec. 1120-145. Hub Connections.—When outside conductors are not connected with the house drain or are properly trapped and the conductor base is located in courts, yards and lawns and not liable to be damaged, the cast iron base, as prescribed above, may be omitted and the connection made direct with hub at least three (3) inches above grade level, with an oakum and cement joint.

TITLE X.

SOIL AND WASTE PIPES.

Sec. 1120-146. Materials Used.—All main and branch soil, waste, vent and back vent pipe shall be of iron, brass, copper or lead.

Sec. 1120-147. Soil Pipe Stacks.—Every building in which there is a house drain or in which water closets or other plumbing fixtures are installed, shall have at least one (1) four (4) inch soil pipe stack, extending through and above the roof.

Sec. 1120-148. Connections with House Drain.—All connections of vertical soil and waste pipe with the main house drain, shall be made with a "Y" with clean-out at end and a one-eighth (⅛) bend or "Y" and one-eighth (⅛) bend on a straight run, or, on short branch drains, with long ells or foot rests having clean-outs on top, or any form of construction accomplishing the same purpose.

Sec. 1120-149. Roof Extensions.—All soil or waste pipe receiving the discharge of any fixture or fixtures on any floor, or any branch thereof receiving the discharge of fixtures of more than one floor shall be extended in full caliber at least one (1) foot above the highest part in any pitched roof or coping wall and eighteen (18) inches above any flat roof without a coping wall; and at least five (5) feet when such flat roofs are used for purposes other than that of weather covering the building.

Sec. 1120-150. Increase Sizes at Roof.—All waste, soil and vent pipes which extend through the roof shall be their full caliber and in no case shall they be less than four (4) inches in diameter.

Sec. 1120-151. Terminals.—The roof terminals of all vent pipes shall be at least three (3) feet above any door, window,

scuttle or air shaft when located at distances less than twelve (12) feet from such terminal.

Sec. 1120-152. Water Closet Connections.—A water closet shall not discharge into a pipe the diameter of which is less than four (4) inches.

Sec. 1120-153. Fixture Connections.—All soil and waste pipe shall be provided with fittings with separate "Y" or "TY" correctly faced inlets for all branch, waste and fixture connections.

Sec. 1120-154. Prohibited Fixture Connections.—In no case shall any fixture connection be made to the lead bend or branch of a water closet or earthenware fixture combined with trap. Nor shall any waste connection be made with any part of a water closet bend fitting.

Sec. 1120-155. Branch Soil and Extensions.—Except in buildings having general or common toilet rooms containing groups of fixtures, branches of soil and waste pipe if twenty (20) feet or more in length shall be extended full size above the roof. If such branches are less than twenty (20) feet in length they may be returned full size to main soil or waste vent.

TITLE XI.

VENTS.

Sec. 1120-156. Vent Pipe Stack—Material.—Main or branch vent pipes smaller than two (2) inches in diameter shall be made of galvanized iron, brass, copper, or lead.

Sec. 1120-157. Soil and Waste Vents.—Where any loops or main vent of more than two-thirds (2-3) the diameter of the adjoining soil pipe is reconnected therewith, the soil vent must be increased at the point of assemblage.

Sec. 1120-158. Vents—Length from Trap.—The back vent of any fixture trap shall be as close to the trap as practicable. Trap re-vents shall be continuous where possible. Where the vent or re-vent pipes are continuous and the traps are ventilated through the waste fittings, the center of the outlet of such fittings shall not be set below the water seal of the trap, and the trap shall be not more than three (3) feet from the waste fitting developed length. No crown venting shall be permitted.

Sec. 1120-159. Main Vents—Reconnected.—Except for circuit vent systems, all main vents shall be connected at their base to the main waste or soil pipe at or below the lowest branch of fixture fitting and shall be extended through and above the roof, or be reconnected to the adjoining soil or waste vents at least 3 ft. 6 in. above floor line of highest fixture connection. If the main vent of such soil or waste pipe stack is less than twenty (20) feet distant it may be reconnected. But no such reconnected vent stack, when the spacing of the piping exceeds eight (8) feet, shall be higher than six stories.

Sec. 1120-60. Vent Pipe Grades and Connections.—All branch vent and back vent pipes shall be graded so as to drip back to the soil or waste pipe by gravity; where the discharge of fixtures above exceeds the area of a soil or waste stack, all vent pipes must rise at an angle of not less than forty-five (45) degrees. All connections between soil or waste pipe, and vent pipe lines shall be made with proper size drainage fittings, sanitary "T's" or "Y's" set in such manner as not to be unduly exposed to back water and splash of wastes. On horizontal runs such connections shall be taken off above the center line as near the crown as possible and rise at an angle of not less than forty-five (45) degrees to a point above the top of the fixtures.

Sec. 1120-161. Back Vents for Adjoining Fixtures.—Where two (2) fixtures are located on opposite sides of a wall and directly opposite each other and on the same floor in any building, and have a common soil or waste pipe in the separating wall, the re-vents from either of the fixtures may connect into the one vent pipe at the intersection of the waste fitting.

Sec. 1120-162. Changing Soil and Vent Pipe.—In existing buildings where the soil pipe is not extended above the roof or where there is a sheet metal soil vent pipe and the style or location of the water closet is changed, or replaced with a new one, a vent pipe of a size and of the material herein required shall be run.

Sec. 1120-163. Trap Back Vented.—All traps must be protected from syphonage and back pressure, and the drainage system ventilated by special lines of vent pipes and back vent pipes.

Sec. 1120-164. Continuous Vents—Where Possible.—The back vent pipe shall be continuous from the waste where possible. Where the discharge of fixtures above exceeds the area of the soil or waste stack, the fixture below nearest to waste stack shall have a continuous waste and vent pipe of not less than one-half (½) the diameter of the stack.

The trap for a bath tub shall waste and be re-vented through either a soil pipe "Y" or "TY" or a drainage recessed "Y" or "TY" fitting.

Sec. 1120-165. Back Venting Water Closets.—Every water closet, pedestal urinal, and slop sink, having a floor connection shall be back vented from the soil or waste branch and preferably on the top of the branch. When connected with the vertical arm of a bend it shall be made above the top of the horizontal branch.

Sec. 1120-166. Circuit Vents.—Every branch soil or waste pipe to which a group of two (2) or more water closets, pedestal urinals or trap standard slop sinks is connected, or which is required to be extended, may be vented by a circuit or loop vent. But if such branch soil pipe on a circuit vent system measures less than twenty (20) feet from center of main soil pipe to the furthermost fixture and there are not more than six (6) of the above noted fixtures thereon, the vent portion of such circuit systems may be reduced to three (3) inches. Where more than one-half the permissible number of the above noted fixtures are installed each such branch soil or waste pipe, six (6) inches or under in diameter, shall be extended full size of the main forming the circuit vent stack. For a lesser number of the above noted fixtures and for pipe over six (6) inches in diameter, see following section. All circuit soil vent mains more than twenty (20) feet distant from main stack shall extend through and above the roof.

No circuit or loop vent shall be used as a waste or soil pipe.

Sec. 1120-167. Loop Vents.—The vent portion of a soil pipe loop vent may be not less than one size smaller than the soil pipe.

Sec. 1120-168. Fittings on Circuit Vents.—All fittings on circuit or loop vent system or modifications thereof shall be the same as prescribed for soil and waste pipe, except that short ells or quarter bends may be used above any fixture inlets, where not otherwise prohibited.

Sec. 1120-169. Vertical Arm—How Taken Off.—The vertical arm of a circuit or loop vent shall be taken off the top of the main branch, in front of the furthermost fixture connection.

Sec. 1120-170. Local Vents—Material.—All local or surface vent pipes may be constructed of galvanized iron or sheet copper. All changes of direction or increase or reduction of size shall be made with similar long "L's," "Y's" and reducers as prescribed for drainage pipe.

Sec. 1120-171. Local Vents—Required.—All water closet and urinal hoppers or troughs or slop sinks shall be local vented when located in rooms or compartments lighted by interior shafts, courts or by skylights, or in rooms of large undivided floor areas, or in other closets or rooms not in direct contact with an exterior open air space of a street, alley, yard, open court or court-way or artificially ventilated. Such vent shall be connected to a constantly heated chimney or flue above the highest opening in said flue, or be carried up to a small air-tight metal cabinet containing gas jets or a fan, and the pipe extended at least three (3) feet above the roof and capped with ventilator, but no such local vent shall be connected in any way with the general ventilating system of the building.

Sec. 1120-172. Local Vents—Heated Flues.—Where local vents are connected with a chimney or heated flue, the area of the main vent so connected shall not exceed one-tenth (1-10) of the area of the chimney or flue carrying smoke or the products of combustion connected therewith.

Sec. 1120-173. Local Vents—Fans.—Where no heated flue of sufficient size is available and the main vent is larger than six (6) inches, a suction fan or blower shall be employed to insure a constant flow of air during the time that the fixtures so vented are in use.

TITLE XII.

REFRIGERATOR, SAFE AND SPECIAL WASTES.

Sec. 1120-174. Material.—Refrigerator, safe and special waste pipe lines, unless othewise prescribed in this title, shall be of galvanized iron and not less than one and one-quarter (1¼) inches in diameter, with branches of the same diameter. Short branches and traps may be made of lead. They shall have recessed fittings, and all branch connections shall be made with forty-five (45) degree "Y's" and all changes of direction shall be made with forty-five (45) degree elbows. The traps need, not be back vented, but all off-sets and changes of direction shall have clean-outs so placed as to control all of the piping.

Sec. 1120-175. Refrigerator Safe Waste Pipes.—Waste pipe from refrigerator wastes, safes or drip pans shall be as short as possible and discharge into an open, water supplied sink, or an accessibly placed floor drain with a trap. The inlets of such waste pipe shall be provided with removable strainers secured in position by brass bars.

Sec. 1120-176. Refrigerator Wastes.—The waste pipe from a refrigerator, ice box or tray, or any receptacle in which provisions are stored shall be arranged so that they may be properly flushed.

The said wastes may discharge only:

(a) Into an open portable pan or lead safe.

(b) Into an open fixture or floor drain or yard or area drain.

(c) Into a common trap provided with a funnel shape receiver, where such trap has a constant intake of water.

Sec. 1120-177. Location of Ends of Safe Wastes.—Where safe wastes end over fixtures and traps, as prescribed in subsections b and c, such fixtures and traps shall be located in the cellar or basement. In no case shall the drip from a safe waste pipe discharge into a sink in a room used for living or cooking purposes. The provisions of this and of the previous sections of this title shall apply to all safe wastes in constant or intermittent use; except that the ends of tell-tale wastes leading from safes located to detect leaky or sweaty pipes, fittings or fixtures, may drip at any convenient, observable point on any floor, but not necessary over a trapped fixture.

Sec. 1120-178. Ice House and Storage Wastes.—The wastes from floor drains or washes or drips in ice houses, and refrigerator rooms, ice boxes or compartments used in markets, cold storage plants, depots, club houses, hotels, restaurants, saloons or any room where ice is stored, or where provisions or food supplies are stored, seasoned, baked or prepared for table use, shall discharge into an open outdoor catch basin or trapped fixture, as prescribed above, located outside of such house, building, room or compartment.

Sec. 1120-179. Overflow Pipes.—The overflow pipe from a water supply tank shall discharge upon the roof or be trapped into an open fixture.

Sec. 1120-180. Urinal Safes.—Urinal platforms and safes shall not be directly connected with any drains, soil or waste pipe, except when used in combination with a urinal floor gutter. The outlet of such gutter shall be provided with a brass strainer, a trap and waste of not less than two (2) inches, with arrangements for flushing of same while in use. If such safe waste also serves as a floor waste outlet the trap shall be at least three (3) inches in diameter.

Sec. 1120-181. Overflow and Safe Waste Extension.—When there is more than one (1) connection in any vertical lines of a refrigerator, overflow, or safe waste pipe each branch shall be as short as possible and be separately tapped with trap and clean-out placed as near to the inlet as possible, and the waste pipe shall extend up independently through the roof as provided for other vent pipes. All such traps shall be run exposed or be accessible.

Sec. 1120-182. Sizes of Main Safe Wastes.—The minimum sizes of the main safe waste line for refrigerators in dwellings, tenements and lodging houses shall be one and one-half (1½) inches for four (4) stories; two (2) inches for five (5) to seven (7) stories; and two and one-half (2½) inches for eight (8) and over.

Sec. 1120-183. Waste Pipes for Acid Sinks.—Waste pipes from acid sinks shall be constructed of "extra heavy" cast iron pipe enameled on the inside and asphalt or tar coated on the outside and fitted with rust joint connections or chemically pure lead lined pipe or any other assemblage of piping not affected by acids may be used. If placed on the outside of a building such pipes may be of vitrified earthenware pipe, with calked and cement joints, and be properly trapped before entering the sewer or drain. In no case shall corrosive liquids or other spent acids liable to destroy or injure drain, sewer, soil or waste pipe, discharge into them without being thoroughly diluted or neutralized, by passing through a properly constructed trapped dilution or neutralizing sink or tank; such sink or tank shall be automatically provided with a sufficient intake of water or neutralizing medium or substance so as to make its contents non-injurious before being discharged.

Sec. 1120-184. Creameries and Milk Houses.—Waste pipe from milk vats, sterilizers, or other receptacles or sinks used in creameries and milk houses shall be of the same size and material as wastes from sinks, etc. Such wastes may discharge outside of the storage room on a water-tight floor having a catch basin, or they may discharge into a properly constructed sink.

Sec. 1120-185. Public Laundries, Breweries, Etc.—Waste pipes for wash trays, washing machines and other like fixtures in public laundries or dye houses or breweries, bottling works, stables, garages or places in which much water is used, located in rooms having water-tight floors and bases at least six (6) inches high and a properly constructed catch-basin floor wash or drain with adjustable or removable iron or brass strainer cover, may discharge on said floor.

Sec. 1120-186. Floor Washes.—Floor washes with adjustable strainers and separately trapped, located in rooms constructed as prescribed in the previous section, may be used in the floors of clinical lecture rooms and in water closets, bathrooms, washrooms for general public use, or in laboratories and hotels, club and restaurant kitchens, and when not in use the inlet shall be capped air tight as provided for clean-outs. Where the strainers of such washers are flush with floor they shall be hinged and the trap, strainers and clean-outs shall be made of brass.

Sec. 1120-187. Indirect Connections.—No plumbing fixtures other than those prescribed in the previous sections of this title, except a set of wash trays, bar sink or a soda fountain in sink, shall be set up with an indirect connection to a house drain or sewer. The waste from every such set of trays or sinks shall be so constructed as to be easily removed and cleaned and if not directly connected, may or may not be trapped, but shall discharge over a properly trapped fixture located as near as practicable to the fixture. Such trapped fixtures shall not be located in inaccessible or unventilated cellars.

Sec. 1120-188. Kitchen Wastes to Catch-basins.—Kitchen or other greasy wastes from hotels, restaurants, club-houses, public institutions or other establishments in which much cooking is done or greasy wastes obtained, shall be intercepted by a catch-basin as further prescribed in this code, or grease trap, and thence conducted to the house sewer.

Sec. 1120-189. Catch-basins Omitted.—Where such catch-basins are likely to freeze or no proper area, court or yard is available for the location of such catch-basin, the catch-basin for kitchen wastes may be dispensed with if a suitable grease trap of approved construction is installed and provided with a water jacket through which shall circulate the water that is drawn for the general kitchen use. Such grease traps shall at all times be accessible for cleaning. Clean-outs shall also be provided at every change of direction and at every twenty-five (25) feet on the horizontal waste pipe before entering the house drain.

Sec. 1120-190. Stable Wastes—Gutters and Traps.—Floor washouts, urinals, gutters and wash racks in barns or stables shall be provided with traps, having heavy strainers. Such traps shall be located with tops flush with the floor line. An adequate water supply shall be provided for flushing such gutters.

Sec. 1120-191. Stable Wastes—Catch-basins.—All liquid wastes from barns or stables and manure pits and stable yards shall be intercepted before entering the sewer by a catch-basin placed outside of the building, a closed and vented cast-iron catch-basin provided with bolted air-tight iron cover, or in lieu of a catch-basin floor drain for one or more stalls discharging into an accessible running trap provided with a constant water flush may be used. Such drains and wastes shall be vented by proper vents through the roof as prescribed for other soil and waste pipe.

TITLE XIII.

FIXTURES—WATER SUPPLY.

Sec. 1120-192. Water Closets—Material.—All receptacles used as water closets, urinals or otherwise for the disposal of human excreta shall be either white vitrified earthenware, hard natural stone or cast-iron white enameled by the dry process on inside. All such receptacles shall have perfectly smooth, non-absorbent interior surfaces. If cast-iron is used it shall be enameled or painted on the outside with at least three (3) coats of non-absorbent and non-corrosive paint.

Sec. 1120-193. Fixtures—Quality.—All materials used for the purpose of plumbing fixtures shall be non-absorbent and impermeable. The use of metal and wood shall be restricted as prescribed in subsequent sections of this title.

Sec. 1120-194. Water Closet Bowls.—The bowls of water closets shall be made in one piece and of such shape and form as to hold a sufficient quantity of water when filled up to the trap overflow so as to completely submerge any matter deposited in them and properly flush and scour the soil pipe when the contents of the bowl is discharged. Bowls not made in combination with their traps, but as in short hopper shapes, shall have their interior enameling or vitrification extended and connection made with the trap below their visible seals. The trap of such water closets shall not be concealed below the floor level.

Sec. 1120-195. Flushing Rims.—All water closets, pedestal urinals or slop sinks with sink and trap combined, shall have visible trap seals; all such fixtures inclusive of rim and lip urinals shall be provided with flushing rims, constructed so as to flush the entire interior surface of the bowl thereof, with water, as prescribed for fixture water supply in subsequent sections of this title.

Sec. 1120-196. Open Plumbing.—All plumbing fixtures in buildings shall be set free and open and shall be so placed as to be readily accessible for cleaning.

Sec. 1120-197. Low-down Water Closets.—Low-down tank water closets shall be of a syphon pattern, provided with refilling devices.

Sec. 1120-198. Water Closets Prohibited.—Pan, valve, plunger washout, and other water closets having invisible seals or an unventilated space or the walls of which are not thoroughly washed at each discharge are prohibited.

Sec. 1120-199. Latrines.—Latrines or range closets may be installed in or about buildings designed for the use or occupancy of a large number of persons, but not used as dwellings or lodgings, provided:

(a) The material used in the construction of such closets shall be of the kind and quality prescribed in Sec. 222 and 223 of this Code.

(b) No more than ten sections or seats shall be joined in one range.

(c) Each section shall be provided with means of flushing the front and rear inside surface and so constructed that a body of water not less than 1½ inches deep shall be retained under each seat at all times.

(d) Each range shall be provided with a tank that will automatically discharge at intervals of not more than five (5) minutes, not less than ten (10) gallons of water for each range, in such a manner as to thoroughly flush and scour the entire range.

(e) Each range shall have a separate sewer trap not less than six (6) inches in diameter; all requirements for back venting shall be the same as otherwise required by this Code.

In school buildings or other buildings the room in which such closets are installed shall open only upon a corridor or passageway and shall be ventilated by some positive means that shall remove from the room at least thirty (30) cubic feet of air per minute for each section therein; otherwise than as above provided latrines, range, trough or long hopper water closets and similar appliances shall not hereafter be installed in any building.

Long oval or straight back hoppers with flush tanks and flush rim are prohibited in any building hereafter erected, and may be used only in existing buildings not used for human habitation where there is danger from frost. Such water closet shall be separately trapped with a trap placed directly underneath said water closet and such trap shall have a four (4) inch clean-out screw level with the floor. When located in a cellar or unfinished basement of an existing building used for human occupancy as an open unwarmed workshop, factory or warehouse, but not for habitation, such water closets shall be ventilated, back vented, etc., as an ordinary closet and be further provided with individual frost proof tanks and anti-freezing valves.

Sec. 1120-200.—Anti-Freezing Water Closets in Yards.—When water closets are located in any yard of any building where there is a soil pipe stack and where suitable space is not obtainable within the walls thereof, or in a building not used for human occupancy, no vent or back vent pipe shall be required, but such closets shall be so arranged as to be conveniently and adequately flushed as prescribed above, and the water supply pipes and traps shall be protected from freezing by placing them in a hopper-pit, at least three and one-half (3½) feet below the ground surface.

The walls and floor of which shall be brick or stone laid in cement mortar, or of Portland concrete. Where all parts of water closets and traps of same are accessible without the necessity of a pit, the pit may be omitted. The waste water pipe from the hopper tank supply pipe shall be conveyed to the drain through a pipe at least one-fourth (¼) inch diameter properly connected to inlet side of trap.

Sec. 1120-201. Water Closets Removed.—No type of water closet or urinal, or other fixtures shall be maintained if so broken or in any way defective as to make it unsanitary.

Sec. 1120-202. Urinals.—All urinals, troughs or gutters except as otherwise prescribed shall be constructed of materials impervious to moisture and that will not corrode under the action of urine. And the floors within at least two (2) feet of such gutters and the walls at least four (4) feet high shall be made equally water-tight and impervious. The backs and sides of the stalls of such urinals which receive, or are liable to come in contact with the urine, shall be constructed of materials impervious to water. In districts having no sewer connection copper or galvanized iron urinal troughs may be used in outhouses, sheds, barns and in yards and shall be located at least ten (10) feet distant from any building of better grade.

Sec. 1120-203. Wooden Trays and Sinks.—The installation or maintenance of fixed wooden washtrays or sinks is prohibited in any building or part of building designed or used for human habitation, but may be used in any building where such trays are in daily use, such as public laundries and dye houses.

Wooden troughs or sinks, with or without metallic lining, shall be allowed only for bar sinks, soda fountain sinks or dish sinks in hotels, restaurants and public kitchens and may be lined only with copper or lead.

Sec. 1120-204. Shower Bath Trap.—A floor trap for a shower located in a cellar or basement floor shall be provided with a strainer and clean-out screw.

Sec. 1120-205. Bath Tubs.—No new copper-lined wooden bath tub shall be installed, nor shall any old fixture of this class be reconnected in any location where it had not been previously set. No old tub shall be relined. Any defective bath tub condemned by the Inspector shall be removed.

Sec. 1120-206. Groups of Fixtures.—A group of not more than three (3) basins or a set of three (3) wash trays, with a trap placed under center fixture or a combined sink and wash tray will be considered one fixture and will require but one trap. Except as noted for sectional fixtures all other groups or batteries or ranges of fixtures shall be an assemblage of individual fixtures or group of three as prescribed above, each separately trapped as prescribed above.

Sec. 1120-207. Sectional Fixtures.—Sectional wash sinks and urinal troughs may also waste through one (1) trap, provided that where more than three (3), but not exceeding five (5), sections—each section not to exceed three (3) feet in length—are used, the trap shall be two (2) inches in diameter. When such fixtures are composed of more than five (5) sections, the traps shall not be less than three (3) inches in diameter.

Sec. 1120-208. Kitchen Sinks.—Kitchen sinks used for single families or a single suite of apartments need not be provided with catch-basins or grease traps, but may be provided with a plain trap or drum trap and accessible clean-outs. The outlet of every kitchen or slop sink, if provided with a removable strainer, shall have an auxiliary strainer underneath.

Sec. 1120-209. Water Supply and Fittings.—All water supply pipe for a plumbing system shall be galvanized iron, brass or lead pipe; with galvanized malleable or cast iron,brass water fittings or wiped joints.

Sec. 1120-210. Standpipes and Fire Lines.—The standpipes and fire lines prescribed in the Building Code shall be provided with galvanized fittings as prescribed for wrought iron soil pipe.

Sec. 1120-211. Shut-offs and Drips.—The main shut-off on the water line shall be placed near the curb. There shall also be a shut-off and drip on the main supply just inside of the foundation wall. Each vertical branch shall have a shut-off and drip at its lower end.

Sec. 1120-212. Water Pipe Protection.—All concealed water pipe, storage tanks, flushing cisterns or fixture traps shall be protected from freezing and all water, soil and waste pipe in contact with steel frames shall be lagged or covered.

Sec. 1120-213. Water Supply to Fixtures.—All water closets or other plumbing fixtures shall be provided with a sufficient supply of water for flushing, to keep them in proper and cleanly condition, and each fixture or group of fixtures shall be so connected as to permit of being shut off without interference with any other fixture or group of fixtures.

Every water closet and pedestal or hopper urinal shall be flushed by an automatic flushing valve; or tank of at least four (4) gallons capacity. The flush pipe shall be at least one and one-quarter (1¼) inches in diameter, except for outside hoppers. All other urinals may be supplied direct from the water supply with valve control.

Sec. 1120-214. Flushing Tanks—Groups of Fixtures.—A group of water-closets or urinals, on the same floor, subject to constant use, as in schools and factories, may be supplied from one (1) tank, if provided with an automatic simultaneous flush, provided, that each individual closet shall receive at least three (3) gallons and each urinal bowl one (1) gallon of water at each flushing and the discharge is of such force as to cleanse each individual bowl at each flush.

Sec. 1120-215. Automatic Flush Tanks.—All urinals having either intermittent or automatic flushing devices shall be flushed at regular intervals not to exceed seven (7) minutes each, during the hours that such fixtures are in use. The provisions of this and the previous sections shall also apply to each sectional length of urinal trough and gutter; except that the backs and sides of gutter stalls, to the height of at least three and one-half (3½) feet, shall be kept constantly moist with a proportionate supply of water while in use.

Sec. 1120-216. Tanks—Drinking Water.—Tanks in which water to be used for drinking or other domestic purposes is stored shall not be lined with lead or sheet zinc or sheet copper or brass not tinned.

Sec. 1120-217. House Tanks—Supports.—All house supply tanks used for storing the domestic supply shall be covered so as to exclude dust and so located as to prevent water contamination by gas and odors from plumbing fixtures.

House supply tanks must be of wood or iron or of wood lined with tinned and planished copper or lead.

House tanks must be supported on iron beams, if tank and its contents weigh over 3,000 lbs.

In no case shall the overflow be connected with any part of the plumbing system.

Emptying pipes for such tanks must be provided and be discharged in the manner required for overflow pipes, and may be branched into overflow pipes.

TITLE XIV.

TOILET ROOMS.

Sec. 1120-218. Water Closets, Location of.—Water closets for all new buildings or additions hereafter erected shall be located in separate compartments within their walls, but no water closet or urinal shall be located or maintained in any room or compartment devoted to any other than toilet room purposes. Exception: Toilet rooms enclosed by dwarf partitions located as prescribed.

Sec. 1120-219. Water Closets, Location Prohibited.—No water closet, urinal, or slop sink shall be located or maintained in a closet under a stairs and unprovided with a window opening to the outer air, nor in areas under sidewalks; nor in any closet, room, basement or compartment that is not well lighted and in direct communication with outer air, through windows opening onto streets, alleys, yards or courts, or vent shafts, or ventilated skylights, or artificially lighted and ventilated as prescribed under this Title.

Sec. 1120-220. Number of Closets and Sinks—Dwellings.—Every building occupied as a dwelling, when located within access of a public sewer and water service, shall be provided with at least one (1) water closet and one (1) sink for every ten (10) persons or part thereof accommodated.

Sec. 1120-221. Number, in Tenements.—For the number of water closets and sinks in "Tenements" of buildings of the Third Grade, see Secs. 839 to 840 inclusive of Title XXXIV, Part II of the Building Code.

(Secs. 829 to 840, Title XXXIV, Part II, of the Building Code: "Water Supply—Every tenement shall have water furnished in sufficient quantity at one (1) or more places on each floor occupied or intended to be occupied by one (1) or more families. The owner shall provide proper and suitable tanks, pumps or other appliances to receive and to distribute an adequate and sufficient supply of such water at each floor in the said house at all times of the year during all hours of the day and night."

"Sinks—In every new tenement there shall be in each apartment at least one (1) proper sink with running water. In every now existing tenement there shall be on every floor at least one (1) proper sink with running water, accessible to all the tenants of that floor without passing through any other apartment, if there be one (1) such sink in each apartment. In no tenement shall there be woodwork enclosing sinks located in the public halls; the space underneath sinks shall be left entirely open.

"Water Closets, Number of—In every tenement hereafter erected there shall be a separate water closet in a separate compartment within each apartment provided that where there are

apartments consisting of two (2) rooms there shall be at least one (1) water closet for every two (2) apartments.")

Sec. 1120-222. Number in Public and Quasi-Public Buildings.—In every building of the First or Second Grade now or hereafter to be erected where the occupancy is transient or alternate in sex or families as in hotels, lodging or rooming houses, or fixed as in detention buildings, there shall be provided at least one (1) water closet and one (1) laving sink for every fifteen (15) persons or part thereof. In all other buildings of such grades the number of such facilities shall be proportioned according to the number of persons permanently employed or occupied therein in the ratio of one (1) water closet and one (1) sink with a proper water supply for every twenty (20) females or part thereof and for every twenty-five (25) males or part thereof, and also in addition one (1) urinal or twenty-seven (27) inches of urinal trough or gutter with proper water supply for fifty (50) males or part thereof.

Sec. 1120-223. Separate Accommodations for the Sexes.—In all buildings where the two sexes are employed or sheltered, there shall be separate accommodations in separate compartments for each sex. When such compartments are adjacent to each other, they shall be separated by sound-proof partitions extending to the ceilings and the entrances shall be screened.

Sec. 1120-224. Toilet Rooms Designated.—Water closets for males shall be plainly marked "Boys' " or "Men's Toilet," and water closets for females shall be plainly marked "Girls' " or "Women's Toilet."

Sec. 1120-225. Water Closets in Lodging-Houses.—In lodging houses and hotels there shall be at least one (1) water closet and one (1) sink accessibly located for each sex of guests on each floor. The general water closet accommodations or toilet rooms of a lodging house, hotel, or tenement or office building shall not be placed in the basement or on any floor in any room not in direct contact with the outer air, as prescribed in Sec. 777, Title XXXI, Part II, of the Building Code.

(Sec. 777, Title XXXI, Part II, of the Building Code—"Windows in Water Closet Compartment and Bathrooms—In every building hereafter erected the total window or skylight area in every water closet compartment or bath-room shall not be less than three (3) square feet, and no such window or skylight shall be less than one (1) foot in width, measured between stop beads.

"When any water closet compartment, bath or toilet room contains more than three (3) plumbing fixtures, either a water closet, urinal, slop sink, bath tub, Turkish slab or washstand, the window or skylight area given above shall be increased one (1) square foot for each additional fixture in excess of three (3), and when a skylight is provided it shall contain an automatic ventilator or ventilators of an area of at least twenty-eight (28) square inches for each fixture.

"All water-closet compartments or toilet rooms located in large rooms as prescribed in Sec. 774, but not adjoining windows or ventilated skylights, shall be artificially ventilated through ducts of the same size as provided for skylight ventilators and as provided in Part VI of this Code.")

Sec. 1120-226. Light and Ventilation of Water Closet Compartment.—For lighting or ventilation of water closet compartments see Sec. 746, Title XXIX, Sec. 777, Title XXXI, and Secs. 842, 843 and 845, Title XXXIV, Part II, of the Building Code.

(Sec. 746, Title XXIX, Part II, of the Building Code—"Columns X and XI, Table F, give the minimum dimensions of all light, air and vent shafts to interior non-living rooms, halls, bathrooms and water closet compartments—and the light wells of interior stairways not facing any street or court.

(a) When buildings of large undivided floor spaces, used for workshops or factories in whole or in part, or in combination with stores, exceed the limits of depth prescribed in Sections 772 and 774, Title XXXI, the 'dead' ends of interior and corner rooms or centers of through rooms with long walls shall be provided with vent shafts as follows:

The widths of such shafts shall be not less than the widths given for courts in Columns IV and VI, Tables F, and their length shall be at least one-tenth (1-10) the depth of the room or length of the wall; provided, that if located as an 'inner' court there shall be at least one (1) such shaft for every eighty (80) feet or part thereof of width of the building, or one (1) for every forty (40) feet or part thereof of width of building if located as an 'interior' court.

(b) Interior stairways, water closet compartments, halls and elevators, if not in conflict with any other provision of this Code, may be grouped around such vent shafts in any building, provided, that their location in buildings as above described does not obstruct the windows adjoining the narrowest dimension of any room.")

(Sec. 777, Title XXXI, Part II, of the Building Code—"Windows in Water Closet Compartments and Bath-rooms—In every building hereafter erected the total window or skylight area in every water closet compartment or bath-room shall not be less than three (3) square feet, and no such window or skylight shall be less than one (1) foot in width, measured between stop beads.

When any water closet compartment, bath or toilet room contains more than three (3) plumbing fixtures, either a water closet, urinal, slop sink, bath tub, Turkish slab or washstand, the window or skylight area given above shall be increased one (1) square foot for each additional fixture in excess of three (3) and when a skylight is provided it shall contain an automatic ventilator or ventilators of an area of at least twenty-eight (28) square inches of each fixture.

All water closet compartments or toilet-rooms located in large rooms as prescribed in Sec. 774, but not adjoining windows or ventilated skylights, shall be artificially ventilated through ducts of the same size as provided for skylight ventilators and as provided in Part VI of this Code.")

(Secs. 842, 843 and 845, Title XXXIV, Part II, of the Building Code—"Windows in—In tenements hereafter to be erected water closet compartments shall have a window opening directly upon the street or yard, or upon a court or vent shaft. See Title XXXI. In existing tenements such compartments shall have a window opening directly upon the street, or upon a yard not less than four (4) feet deep, or upon a court or shaft of not less than twenty-five (25) square feet in area, open to the sky without roof or skylight. Every such window shall be at least one (1) foot by three (3) feet between stop beads, and the entire window shall be made so as to readily open."

"Lighted by Skylight—When a water closet compartment is located on the top floor and is lighted and ventilated by a skylight over it, or is located at the bottom of a shaft or court of lawful size and is lighted and ventilated by a skylight over it at the bottom of such shaft or court, no window shall be necessary, provided the roof of such skylight contains at least three (3) square feet of glazed surface and is so arranged as to readily open."

"Artificial Lighting of—Every water closet compartment hereafter placed in any tenement shall be provided with proper means of lighting the same at night. If fixtures for gas or electricity are not provided in said compartment, then the door of said compartment shall be provided with translucent glass panels, or with a translucent glass transom, not less in area than four (4) square feet.")

Sec. 1120-227. Water Closets in Existing Buildings.—Whereever a water closet compartment enclosed by full or dwarf partitions is to be located in a basement or in a room in an existing building having no window, open shaft or ventilating skylight, such compartment shall be lighted from the adjoining room through fixed windows of double area prescribed for by the aforesaid Title XXXI, or shall be artificially lighted. All such rooms or compartments shall be ventilated through ducts, flues or pipes of an area of at least twenty-eight (28) square inches in cross sections for each water closet, urinal, slop sink, bath tub, Turkish slab or shower bath, and common sink, washstand or other plumbing fixture therein contained and where there are four (4) or less water closets or equivalents in urinals therein contained each such fixture shall in addition be local vented.

Sec. 1120-228. Ventilating Opening.—If the ventilating opening of such duct, flue or pipe is protected by a register face or screen, the aggregate area of the opening in such face or screen shall not be less than the required area of the ventilating pipe. The ventilating pipe may be connected to an independently located chimney or shaft or run through the roof properly capped with ventilator or connected with the artificial ventilating system of the building subject to the regulations and approval of the Board of Health.

Sec. 1120-229. Mechanical Ventilation.—All such compartments located as prescribed in Sec. 1120-257 containing more than four (4) water closets or their equivalents in other fixtures, which would be required to be local vented, or any other room which contains ten (10) or more such fixtures shall be ventilated by mechanical means in such manner as to insure a change of air, at normal temperatures in the compartment or room at least once every ten (10) minutes during the time such fixtures are in use. In all such cases the ventilating pipe shall be proportioned to suit the cubic contents of the room and the necessary velocity of the air current required to produce such change when the apparatus is operating at its normal speed, instead of the fixtures therein contained. See also Title XI.

Sec. 1120-230. Toilet Rooms—Doors and Coverings.—All interior doors and partitions shall be raised at least six (6) inches above the floor. Each individual water closet seat within such compartment shall be separately enclosed, except that in schools and penal institutions doors may be omitted from the stalls. The interior partitions shall be supported on substantial galvanized iron or brass legs.

Sec. 1120-231. Construction of Public Toilet Rooms.—All water closets, urinals, or bath compartments or toilet rooms in buildings of the First and Second Grades and in all other buildings where toilet rooms are for public or general use shall have the floors, and walls to a height of at least six (6) inches of cement, slate, marble, brick or other non-absorbent material.

Sec. 1120-232. Outside Water Closets.—A water closet shall not be installed on an open porch or other like place. Outside water closets may be installed only for buildings erected prior to the adoption of these regulations, and only when these buildings remain on the same site and are not altered or changed.

Sec. 1120-233. Enclosure of Yard Water Closets.—The enclosure of a yard water closet as prescribed in Title XIII shall be placed not less than eight (8) feet from any dwelling or other place of human habitation and ventilated by slatted openings or movable sash in windows and there shall be a trap door in the floor of sufficient size for access to the hopper pit.

TITLE XV.

INSPECTION AND TEST.

Sec. 1120-234. Tests of Plumbing Materials.—All pipes, fittings and traps used in construction of house drainage or plumbing system shall be tested.

Sec. 1120-235. Nature of Tests.—All piping of a drainage or plumbing system shall be tested by the plumber in charge; with a water or air test, in the presence of the Inspector or authorized deputy.

Sec. 1120-236. Materials and Order of Tests.—The material and labor for the tests shall be furnished by the plumber.

The tests may be made separately as follows:

(a) The house drain, including all piping to the height of ten (10) feet above the highest point on the house drain, except the exposed connections to fixtures.

(b) The soil, waste, vent, back vent, inside conductor and drainage pipes which would be covered up before building is enclosed or ready for completion.

(c) All other work known as rough work between house drain connections to points above the finished floors and beyond the finished faces of walls and partitions.

(d) The tests required for (a) and (b); or (b) and (c); or (a), (b) and (c) may be combined.

Sec. 1120-237. House Drains.—The house drain may be tested with the air test. All alterations, repairs or extensions which shall include more than ten (10) feet, shall be inspected and tested.

Sec. 1120-238. Stable and Yard Drains.—If a stable or any part of a stable be used for human habitation the same tests and inspections of the plumbing and drainage system thereof shall be made as in case of any ordinary dwelling. Otherwise, all stable and yard drains shall be inspected, but need not be tested.

Sec. 1120-239. Conductor Pipes.—Conductor pipes and their roof connections within the walls of buildings shall be tested by the water or air test.

Sec. 1120-240. Stacks in High Buildings.—All stacks over seventy-five (75) feet in height shall be water or air tested.

Sec. 1120-241. Section Tests.—If the drain or any part of the plumbing system is to be tested separately, as prescribed in Sec. 1120-267, there shall be a head of water at least ten (10) feet above all parts of the work so tested, and special provisions must be made for including all joints and connections in at least one test.

Sec. 1120-242. Covering of Work.—No drainage or plumbing system or part thereof shall be covered until it has been inspected, tested and approved as herein prescribed.

Sec. 1120-243. Uncovering of Work.—If any drainage or plumbing system, or part thereof, is covered in before being regularly inspected and tested and approved, it shall be uncovered upon the directions of the Inspector.

Sec. 1120-244. Fixtures—Final Test.—When the plumbing system is completed and the water is turned on and the traps filled, it shall be inspected. When the location or style of any fixture is changed it shall be inspected.

Sec. 1120-245. Water Tests.—The water test shall be applied by closing the opening at the outlet end of the house drain and all other openings in the piping with proper testing plugs to the highest opening above the roof, and completely filling the system with water; the water column to be left standing at least fifteen (15) minutes. If the water level remains constant during such time the system shall have been acceptably tested.

Sec. 1120-246. Tests.—The smoke test shall be made with a pressure of not less than five (5) pounds per square inch, equal to ten (10) inches of mercury supplied with a force pump, and such pressure maintained at least ten (10) minutes with leakage.

The use of spring gauges or wooden plugs in making tests is prohibited.

The use of either the smoke or water test is left optional with the plumbing inspector. When there is danger of freezing the smoke test only shall be applied. This provision of employing the smoke test only shall apply to house drains where the use of crock pipe is permissible, except that the pressure applied may be reduced to not less than three (3) pounds.

Sec. 1120-247. Smoke Test.—The smoke test shall be used in testing the sanitary condition of the drainage or plumbing system of all buildings, where there is reason to believe that the plumbing system has become dangerous or defective on account of settlement of the building or by abuse, accident or any other cause. The smoke machine shall be connected to any suitable opening or outlet and when the system is completely filled with dense pungent smoke, and the openings emit smoke, they shall be closed and an air pressure equivalent to one (1) inch water column shall be applied and left standing at least ten (10) minutes. If there is no leakage or forcing of trap seals, indicated by the fluctuation of the drum float, the system shall be deemed air or gas tight. But nothing in this section shall be so construed as to prevent the removal of any clean-out or unsealing of traps, to ascertain if the smoke has reached all parts of the system.

Sec. 1120-248. Defective Work.—If test shows defects the defective work or materials shall be replaced within three (3) days and the test again applied. In all cases the Inspector shall designate the points at which the pressure shall be relieved or drawn off.

Sec. 1120-249. Repairs.—Tests shall not be required after the repairing or replacing of any old fixture, faucet or valve by a new one (to be used for the same purpose) forcing out stoppages, repairing leaks, or relieving frozen pipes and fittings; but such repairs or alterations shall not be construed to include cases where new vertical or horizontal lines of soil waste, vent, or interior leader or conductor pipe are used, or their relative locations changed, provided, in a building condemned by the Health Officer because of unsanitary conditions of the house drainage or plumbing, no such drainage or plumbing shall be considered as coming under the head of repairs, but all such house drainage or plumbing shall be done as in the case of new buildings.

DRAINAGE ACCESSORIES AND VAULTS.

TITLE XVI.

CATCHBASINS.

Sec. 1120-250. Yard Catchbasins.—Yard catchbasins which receive surface drainage or the discharge from hydrants or waste pipes shall be no less than twelve (12) inches in diameter and have a four (4) inch trapped outlet accessible for cleaning and placed below the frost line. All such catchbasins shall be built water tight and wher located on driveways, courts or passageways, or in any place where the inlet is liable to injury, shall be provided with heavy cast iron frame and strainer, set flush with grade.

Sec. 1120-251. Yard Catchbasins—Construction of.—Yard catchbasins when made of several sections of vitrified pipe shall be assembled as prescribed for crock sewers. The foundation may be either a four (4) inch stone slab or concrete footing projecting at least three (3) inches beyond the pipe and the bottom filled with Portland mortar at least one (1) inch thick. Yard or any other catchbasins prescribed in this Code, when of brick or concrete shall be constructed in the same manner as prescribed in Secs. 1120-284 to 287.

Sec. 1120-252. Kitchen Catchbasins.—Catchbasins for receiving kitchen wastes shall be constructed water tight either of brick, concrete or cast iron. If of brick or concrete, they shall be at least thirty (30) inches internal diameter at the base and may taper to not less than twenty-two (22) inches internal diameter at the top and be finished with an iron cover at grade level.

Sec. 1120-253. Kitchen Catchbasins—Brick.—The walls of such catchbasins, if of brick, shall be hard burned sewer brick not less than one (1) brick thick laid in Portland cement mortar and plastered outside and inside with a half (½) inch coat of Portland cement mortar in proportion of one (1) part of Portland cement and two (2) parts of clean, sharp sand. After the interior coating is put on it shall be given a one coat wash of liquid Portland cement grout. The bottom shall be at least three (3) brick course thick laid in cement mortar or of Portland cement concrete eight (8) inches thick.

Sec. 1120-254. Special Catchbasins.—In garages or other buildings where gasoline or other volatile or inflammable liquids are used or wasted into the sewer system, the catchbasins shall be constructed according to plans which will be furnished by the Chief Inspector of Plumbing.

Sec. 1120-255. Kitchen Catchbasins—Inverts and Traps.—The bottom of catchbasins shall be at least two (2) feet below the six (6) inch invert of the outlet to the sewer. The vitrified tile sewer through which kitchen wastes are conducted shall be at last four (4) inches in internal diameter.

The outlet shall be tapped to a depth of six (6) inches below the invert of the outlet to the sewer, to prevent the escape of grease.

The invert of the inlet to the catchbasins, for kitchen wastes, shall be below the invert of the outlet to the sewer.

TITLE XVII.

CESSPOOLS.

Sec. 1120-256. Sewage Cesspools.—In districts where a main sewer is unavailable and there is sufficient ground for the purpose, a water tight cesspool may with the approval of the Board of Health be used to receive the discharge of house sewage, which may be overflowed to a leaching cesspool, providing there is no danger of contaminating a water supply well or spring, and the soil is of an absorbent character. Otherwise a tight cesspool only shall be permitted to receive the discharge of water closets, and sinks, and the wastes from all other fixtures shall discharge to a surface water course.

Sec. 1120-257. Tight Cesspools.—A water tight cesspool for drainage shall not be less than six (6) feet in diameter by ten (10) feet deep in the clear, or its equivalent oval, built as provided for catchbasins.

Sec. 1120-258. Leaching Cesspools.—A leaching cesspool shall be not less than the dimensions of the water tight cesspool, lined with dry brick or stone. Both tight and leaching cesspools shall be provided with a twenty-four (24) inch cast iron cover and frame.

Sec. 1120-259. Location of Cesspools.—No tight cesspool shall be placed within two (2) feet of any lot line or ten (10) feet of any building or cistern or thirty (30) feet of any well, spring or other source of water supply used for drinking or culinary purposes and all such cesspools shall be maintained water tight. No leaching cesspool shall be placed within three hundred (300) feet of the source of any water supply. The location of cesspools in relation to buildings and source of water supply as

herein prescribed shall pertain to all buildings and such sources whether the same be on the same or adjoining property.

Sec. 1120-260. Cesspool, House Sewer Connections.—All house sewers shall be trapped outside of the building before connecting with a tight cesspool and shall be provided with four (4) inch fresh air inlet on the house side of the trap. Such fresh air inlet shall be at least eight (8) feet distant from any door, window, fresh air supply or other opening. The top of the inlet shall be left open and placed where it is least liable to be disturbed by accident.

Sec. 1120-261. Piping.—The outlet from the tight cesspool shall be through a deep invert the same size as the house sewer.

Sec. 1120-262. Cesspool Vents.—The tight cesspool shall be vented with a four (4) inch cast iron vent pipe extending not less than ten (10) feet above the ground and not less than twenty (20) feet from any window, door or other opening in building used for human habitation.

Sec. 1120-263. Cesspools Prohibited.—No cesspool for sewage shall be constructed in any part of the City of Cleveland where a sewer is available nor shall any connection from such cesspools be made with any sewer. As soon as a sewer is made available in such districts the house sewers shall be disconnected and reconnected with such sewer and the cesspools emptied of their contents, cleaned and filled with earth or ashes.

TITLE XVIII.

SEPTIC TANKS.

Sec. 1120-264. Septic Systems.—In unsewered districts the house sewer may connect to a septic tank system which shall be approved by the Board of Health.

TITLE XIX.

VAULTS.

Sec. 1120-265. Location of Vaults.—No vault, manure pit, or open top cesspool, septic tank or other reservoir which is used as a privy or receptacle for human or animal excreta shall be located within two (2) feet of any lot or alley line or twenty (20) feet of any street line or any building of human habitation or occupancy or within fifty (50) feet of any cistern, well, spring or other source of water supply used for drinking or culinary purposes, whether they are located on the same or on an adjoining lot or premises.

Sec. 1120-266. Construction of Vaults.—All vaults, pits and other open top reservoirs prescribed in above section, hereaafter constructed shall be either of stone, hard brick or concrete at least eight (8) inches thick, built up and maintained water tight. The tops of all such vaults and pits shall extend one (1) foot above the grade of the lot to prevent inflow of surface drainings.

Sec. 1120-267. Privy Vaults.—On premises not accessible to a main sewer privy vaults may be constructed as prescribed in above section, but no vault or pit used as a privy shall have a capacity of less than one and two-thirds (1⅔) cubic yards, i. e., forty-five (45) cubic feet below the corbeled marker line, which marker line shall never be placed above the grade line of the lot.

Sec. 1120-268. Out-Houses.—Over each privy vault, which shall receive nothing but human excreta, there shall be established an out-house constructed as prescribed for yard water closet enclosures in Title XIV. The seats shall be provided with tight fitting covers and the space underneath shall be ventilated by a vent pipe or a box extending upward through the roof, sufficient so as not to become a nuisance. Such vent pipe shall be at least six (6) inches square for every square yard or part thereof of vault surface.

Sec. 1120-269. Clean-out Doors.—The floors of such out-houses shall be made as air-tight as possible and be provided with a trap door not less than two (2) by one and one-half (1½) feet in size communicating with the vault so as to permit its cleaning by pneumatic or other process. Out-houses built of brick, whether resting or not upon the vault as a foundation, the vault shall have a brick clean-out extension outside the brick enclosure raised one (1) foot above the grade of the dimensions of the trap door aforesaid; exterior covers shall be of stone.

Sec. 1120-270. Out-houses for Different Sexes.—Where out-houses are provided for the different sexes, if located nearer than forty (40) feet of each other, the walks or approaches thereto shall be separated by a tight fence at least six (6) feet high, but in no case shall such out-houses be located within ten (10) feet of each other.

Sec. 1120-271. Privy Vaults Prohibited.—Privy vaults shall not be constructed on line of sewered streets nor on any lot where, in cleaning, the night soil would have to be carried through any building of human habitation; nor shall any old vault be connected to a sewer.

Vaults now existing on premises abutting a main sewer shall be cleaned to the bottom and filled with earth or ashes.

Sec. 1120-272. Sewage Disposal—Permits.—It shall be unlawful for any person to construct or maintain any system of house drainage or sewage disposal as prescribed in this or any previous title without a written permit from the Board of Health or Chief Inspector of Plumbing.

Sec. 1120-273. Decision of Chief Inspector of Plumbing.—The Chief Inspector of Plumbing shall use his discretion and his decision shall be final in regard to work in old and new buildings which cannot be or is not governed by rules. All such permits granted must be in writing and kept on file in office.

Sec. 1120-274. The owner or owners of any building or structure, or part thereof, or premises where anything in violation of these regulations shall exist or be placed, and any person who shall violate any of the provisions of Sec. 1120-1 to 1120-305 or be employed or assist in such violation, and all persons who shall fail to comply therewith or any regulation thereof shall for each and every such violation or non-compliance be guilty of a misdemeanor and upon conviction thereof shall be fined not less than five (5) dollars nor more than five hundred (500) dollars, or imprisoned not more than six (6) months.

Sec. 4. That said original sections 201, 202, of the Revised Ordinances of 1907 be and the same are hereby repealed.

Sec. 5. That this ordinance shall take effect and be enforced from and after its passage and legal publication.

OBITUARY.

John Van Pelt.

John Van Pelt, a plumbing contractor of Brooklyn, N. Y., died Tuesday, March 7th, at his home in that city, after two years' illness. He was born in Stapleton, Staten Island, 55 years ago, and belonged to an old Knickerbocker family. His wife and a daughter survive him.

W. D. Whitman.

W. D. Whitman, plumbing inspector and superintendent of streets at San Jose, Cal., died at his home in that city, on Wednesday evening, March 8th, in his 53rd year. He had been in poor health for the past two years and was confined to his bed for five weeks. He is survived by his wife, a son and two daughters.

Edward S. Freeman.

Edward S. Freeman, who recently purchased the plumbing and hardware business of W. J. Dent, at Plainville, Conn., died at his home in that town a fortnight ago. He was one of the best known of the younger business men of his section of the state. He was 39 years of age and was born in Hartford. For some years he was connected with clock manufacturing concern and had only recently acquired an interest in the plumbing business before referred to. He was not married.

W. H. Prescott.

W. H. Prescott, a highly valued staff correspondent and contributor to the columns of "Domestic Engineering," died suddenly from heart failure, while he slept at his home in Camden, N. J., during the night between February 25th and 26th, in his 49th year. Mr. Prescott was the author of the stories of "Ye Old-Time Plumbing Days," which have appeared in these columns, and he had a large acquaintance in the plumbing trade in New York, New Jersey and Pennsylvania. He is survived by his wife and two children.

P. F. Cavanaugh, formerly in the plumbing and heating business at La Crosse, Wis., has opened a similar business at Vermillion, S. D. He would like to receive catalogs from jobbers and manufacturers of plumbing and heating supplies.

N. P. Broad has sold a half interest in his plumbing and heating business at 1007 N. Main St., Princeton, Ill., to John E. Ream. The business will be continued at the old stand under the name of the Princeton Plumbing & Heating Co.

Fields & Humphrey have purchased Lewis F. Fitz & Co.'s plumbing and heating business at Cherokee, Okla. Lewis F. Fitz & Co. are now located in the Stephenson Bldg., Enid, Okla.

At Nashville, Tenn., the board of education has awarded contracts as follows: Plumbing and sewers to East Side Plumbing Co., $11,700; heat regulation, Johnson Service Co., $2,874.

The Milton (Del.) Light, Power and Water Co., has been incorporated, capitalized at $20,000, to supply light, water and public supplies. It is said the company is arranging to erect an up-to-date plant at Milton.

Permits for heating, etc., work, were issued the past week in Philadelphia, as follows: John B. Beirn, heating plant at 712 Pine St.; cost $700. O. H. Guttridge Co., hot-water heating plant at 1721 Vine St.; cost, $3,000. Builder John McShane has the contract for a toilet-room building for St. Vincent's Home, 20th and Race streets, to cost $3,600. Later, plumbing equipment, bath-room accessories, etc., will be installed.

THE METAL MARKET

THE PIG-IRON MARKET FIRMER.

Business during the week has been of smaller proportions than during the greater part of February, but prices are slightly firmer. In the New York market the producers are holding for 50 cents to $1.00 more per ton for the second half delivery; in Buffalo 25 cents more a ton is demanded, and in the Cleveland market, while the activity is not pronounced, prices are firmer. The most encouraging reports come from Philadelphia, indicating that foundry interests there are buying on a larger scale. The largest transactions during the week have been only in thousand-ton lots, but some of the Buffalo furnace interests report inquiries aggregating 50,000 tons. The output of pig-iron during February was more than in January, and the daily rate of production was also larger. In fact, the daily rate of production exceeded any month since October. It is still, however, about 66 per cent of the rate of a year ago. Looking back over the last six months, it is remarkable to observe how steadily prices have been held at a level of about $15.50 per ton for local No. 2 foundry in Chicago. This price is, as has been stated before, the lowest since 1904, when for a few months iron of this grade was sold at about $13.75. Quotations are as follows:

No. 2 Southern foundry, Birmingham	$11.50 to $11.75
No. 1 Northern foundry, New York	15.50 to 15.75
No. 2X Northern foundry, New York	15.25 to 15.50
No. 2, plain, Northern foundry, New York	14.75 to 15.00
No. 2 Northern foundry, Chicago	15.50 to 16.00

OLD IRON.

The demand is fair, but the market is not as excited as a month ago, and prices are much steadier. Consumers are buying in fair quantities, and borings have been in much better demand. An interesting sale was 2,000 tons of Panama scrap, which sold at the high figure of $13.61 on dock, Philadelphia. Quotations for New York City delivery are as follows:

No. 1 yard wrought, long	$13.00 to $13.50
No. 1 yard wrought, short	12.00 to 12.50
Heavy-melting steel scrap	11.50 to 12.00
Machinery cast	12.50 to 13.00
Wrought pipes and tubes	11.00 to 11.50
Malleable castings	11.50 to 12.00
Wrought turnings	6.50 to 7.00
Cast borings	6.50 to 7.00
Stove plate	9.50 to 10.00
Light iron	5.00 to 5.50

LEAD.

Independent producers of lead are taking practically all of the business at 4.40 cents New York and 4.25 cents St. Louis. Some large consumers who habitually buy from the American Smelting & Refining Co. would undoubtedly do so were it not for the fact that they believe the quotation of 4.50 cents must soon be reduced.

COPPER SURPLUS AGAIN LARGER.

The monthly statistics compiled by the Copper Producers' Association were again unfavorable. Stocks increased 14,000,000 pounds. The long-talked-of curtailment by the copper producers has not yet been shown and in the light of recent events it is improbable that harmonious relations can be brought about that will reduce the output of copper. It will probably reduce itself to a strictly competitive basis, where the lowest cost producer will have to discontinue operations until prices again reach a more remunerative level. This is gradually coming about, as is shown, the quotations for both lake and electrolytic being now ⅛ cent cheaper than a month ago. Lake is selling at 12.62½ cents and electrolytic at 12.25. If this low level should continue for the month it will establish a new low point for copper since 1904.

TIN.

The syndicate, which has been boosting tin prices, has not lost control of the market, but has been willing to unload its supplies gradually and prices have fallen to a level of around 40 cents. There is a good inquiry in New York, yet on account of the premium demanded over the London quotation very few of these inquiries have been turned into actual orders. Prices during the week have fluctuated between 40 and 42 cents.

SPELTER.

The spelter market is not at all strong, and, while the general asking quotation is 5.50 cents St. Louis, there are rumors that this price has been shaded. In New York what little business is doing is being taken at 5.65 cents.

HERE AND THERE IN THE TRADE.

Newton, Ia.—J. M. Davidson has purchased the interest of his partner, Harry Scarborough, in the Scarborough & Davidson plumbing establishment.

Hibbing, Minn.—Carl H. Schirmer has severed his connection with the A. C. Schirmer Plumbing Co., and is now established in business for himself in the Superior hotel building, prepared to do heating and plumbing of all kinds.

St. Peter, Minn.—Oscar Erdahl has recently purchased a half interest in L. A. Newgard's plumbing establishment.

St. Joseph, Mo.—The Jackson Plumbing & Heating Co. has been incorporated with a capital of $3,500 by M. W. Jackson, R. M. Jackson, F. L. Sollars and others.

Canton, O.—The Wilson Electric Co. has been incorporated with a capital of $10,000 to deal in electrical fixtures, gas and heating apparatus and appliances. The incorporators are: J. B. Wilson, Colin C. Walshymer, Ellen C. Wilson, Louis E. Loichot and A. C. Mill.

Athens, O.—Papers were filed with the secretary of state increasing the capital stock of the Athens Heat, Light and Power Co., of Athens, from $25,000 to $50,000 to provide for betterments and extensions. Peter Kunz is president and W. Edison Ditlor secretary of the corporation.

Tacoma, Wash.—Walsh & Gardner, wholesale plumbers, will soon begin the construction of a six-story building on Pacific avenue south of 19th street, for their own occupation. The building will have a 50-ft. front and be modern in every detail.

Pleasanton, Cal.—The board of trustees recently passed an ordinance to the effect that only licensed plumbers would be allowed to make sewer-connections with the new septic sewer system, but it has been discovered that none of the plumbers there are licensed and an examination will be held at once to remedy this.

Fort Wayne, Ind.—This city is planning a large extension of its sewer system.

Augusta, Ill.—Fred H. Crain has recently installed a steam-heating plant in the new M. E. Church at Huntsville, Ill. The building is of modern concrete-block construction.

"Domestic Engineering" Cartoon on "The Dangers of Under-Estimating"—No. XXX.

IF ONLY I HAD WATCHED FOR LEAKS IN THE HOLD, I WOULDN'T HAVE BEEN IN THIS FIX
OCEAN OF BUSINESS FIZZLES
"DOMESTIC ENGINEERING"

Did You Ever Feel Lonely, Like This? You Needn't. Get Wise.

If you want to possess a special proof of this or any other of our cartoons, let us have your request at once. We have many applications for our cartoons for framing and want to take good care of all demands made.

JOBBERS OF PLUMBING SUPPLIES HOLD ANNUAL MEETING.

The National Association of Jobbers of Plumbing Supplies held its annual meeting on Thursday and Friday, March 16th and 17th, at the Hollenden Hotel, Cleveland, O.

ANNUAL MEETING OF WROUGHT PIPE JOBBERS

The National Association of Jobbers of Wrought Pipe and Fittings held its annual convention at the Hollenden Hotel, Cleveland, O., on Tuesday and Wednesday, March 14th and 15th.

RADIATOR COMPANY TO START BUSINESS IN SAN FRANCISCO, CAL.

The Ellis Radiator Co., San Francisco, Cal., has been incorporated with a capital stock of $50,000 by M. S. C. Ellis, J. W. Stearns, W. J. Clarke, E. H. Hechman, W. A. Moffett, T. F. Draper and E. Marmet.

NOW WITH THE MODERN WATER SUPPLY CO.

The Modern Water Supply Co., 210 Wood St., Pittsburgh, Pa., announces that it has secured the services of James H. Christie as traveling salesman. Mr. Christie was formerly connected with the Fairbanks Co. as assistant manager of its gas engine department.

THE "DETROIT" DRAINBOARD.

Answering our recent inquiry for the name of the manufacturers of the "Detroit" drainboard, we are advised that this drainboard has been manufactured for a number of years by the Findeisen & Kropf Mfg. Co., 2100 S. Rockwell St., Chicago, from whom may be secured a catalog containing an illustrated description of this article.

PIERCE, BUTLER & PIERCE OPEN BRANCH IN CLEVELAND.

The Pierce, Butler & Pierce Mfg. Co., Syracuse, N. Y., has opened a branch in Cleveland, O., consisting of office, showrooms and warehouse. The branch is in charge of J. H. Baker, jr., and it will take care of the company's trade in Northern Ohio. Mr. Baker will be assisted by P. M. Beecher and C. A. Mosner.

PURCHASES VALUABLE TRACT OF LAND.

The D. A. Ebinger Sanitary Manufacturing Co. recently organized in Columbus, O., has purchased a tract, 200x200 ft., at Lucas and Rich streets, for the purpose of erecting a plant in the near future. The company manufactures heating and ventilating apparatus in addition to plumbers' supplies.

MURDOCK PLUMBING SUPPLY-HOUSE VISITED BY FIRE.

The plumbing supply-house of the Murdock Mfg. & Supply Co., 426-430 Plum St., Cincinnati, O., was visited by a serious fire on Tuesday morning, March 9th. The loss on the stock and the building was covered by insurance. The company expects the interruption in its business will be only of short duration.

MARCH MEETING OF ILLINOIS CHAPTER.

The Illinois Chapter of the American Society of Heating and Ventilating Engineers held its monthly meeting on March 13th, at Vogelsang's Restaurant, Madison St., Chicago. The members sat down to supper at 6:30 and after doing justice to the demands of the department of the interior, President Patterson called the members to order and Secretary Hale took the roll-call. The minutes of the previous meeting were then read and approved.

Chas. F. Newport and Robert A. Widdicombe, members of the Chapter's Committee on Grates were then called upon to give an account of some tests they had been conducting on house-heating boiler efficiencies. Each of these gentlemen gave a very interesting description of their individual tests and the discussion on the points involved was participated in by practically every member present. From the discussion it seemed to be clearly understood that power-boiler methods of testing may not be applied to house-heating boilers, and that the flue temperatures were proportionate to the drafts and the evaporative efficiency. An interesting point was noted among the figures presented, this being a variation in the samples taken of the same coal, the difference being as between 7,000 B. t. u. and 14,000 B. t. u., showing the possibility of getting extremely different results from practically the same fuel.

Under the head of unfinished business, consideration was given to arrangements for the May meeting of the Chapter. This will probably be held in one of Chicago's large hotels, the chief features being the presence of ladies at the supper-table and a theater-party for all after the preliminaries. The arrangements for entertainment were placed in the hands of a committee, composed of Samuel R. Lewis, chairman; August Kehm and Edmund F. Capron.

Considerable time was devoted to discussion of the proposed summer meeting to be held on board ship at Chicago in June. Secretary Hale outlined the propositions that have been made to him by the steamship companies, all of which were very attractive. It was decided to submit the most advantageous of these to the parent society for the consideration of its Board of Governors. Contrary to the expectations, the expenses of the trip will be no more than those incurred by the meeting of the society in any hotel in Chicago. The Illinois Chapter expressed its desire for this maritime meeting, but held itself as ever faithfully under the direction of the main organization. The meeting adjourned at a late hour.

PERSONAL MENTION.

J. M. Reynolds, manager of the Imperial Co., Grove City, Pa., was in Chicago last Saturday on his return trip from the Pacific Coast, where he, among other cities, visited Los Angeles, San Francisco, Portland, Seattle and Spokane. Mr. Reynolds reported a successful business-getting tour and found a most cheering outlook for future business in the territory visited.

Samuel R. Lewis, who has been identified with the heating firm of Lewis & Kitchen, of Chicago and Kansas City, as consulting engineer for the past 14 years, has been admitted into partnership, according to announcement just issued by Edward C. Lewis and John H. Kitchen, the original partners. The firm was established in 1894, and its business will be continued under the old name, with factory in Kansas City, Mo., and with offices in that city and in Chicago.

A. G. Cripps, vice-president and sales manager of the

Prudential Heating Co., Akron, O., was in Chicago last week and called on some of his many friends in the trade.

L. A. Girvin, who has been connected with the Novelty Iron Co., Canton, O., for the past seven years, has recently connected himself with the J. H. McLain Co., Canton, O., and will call on the trade in their interests with their line of radiators and boilers.

Thos. G. McBride has been appointed manager of the Homestead Heater & Mfg. Co., Homestead, Pa.

H. E. Sherlock, until recently secretary and treasurer of the Novelty Iron Co., Canton, O., has retired from active business in this line, and is preparing to leave for California for a few months' recreation. His wife will accompany him.

Fred A. Schossow, secretary of the Climax Sanitary Co., Detroit, Mich., was in Pittsburgh this week on business for his company.

C. A. Ford, of the plumbing-supply firm of Whitney & Ford, Chicago, was in Pittsburgh last week on his way to Philadelphia.

ANENT THE PLUMBING SUPPLY TRADE OF SAN FRANCISCO.

The confidence in the future of San Francisco entertained by big eastern interests can be seen in the manner in which they are establishing coast headquarters there. Within the past few months the Standard Sanitary Manufacturing Co. has established a branch office there in the Metropolis Bank Bldg., J. M. Kohler Sons Co. has transferred its agency from a general manufacturer's representative to a representative sent out from the factory and has established headquarters in the Monadnock Bldg., the John L. Mott Iron Works has located in the Wiley B. Allen Bldg., in greatly enlarged quarters, and others have been active in preparing for the great business that is expected as a result of the completion of the Panama Canal and the stimulation to coast building that will result. The wholesalers have also been very active of late in settling in large and permanent quarters and the trade of the San Francisco territory can now be better cared for than ever before. The Crane Co. is occupying a large structure of its own with much more space at its command than formerly and plans are now being made by the Lally Co. for the erection of a building for the exclusive use of its wholesale business. P. E. O'Hair & Co. have moved down-town and are rapidly becoming prominent in the wholesale business. The John Douglas Co. has also moved into a down-town location and is ready for a large increase in business. In selecting quarters these concerns have taken much more space than present business warrants, indicating that there is a general feeling that a great growth awaits San Francisco and the surrounding territory at no distant date.

TRADE LITERATURE RECEIVED THIS WEEK.

The Lawson Mfg. Co., Homestead, Pa., has just issued a new catalog of gas and gasoline water-heaters. Several new heaters are shown, the most notable being one using gasoline for localities where gas is not obtainable.

The Trenton Potteries Co., Trenton, N. J., has issued a handsome supplement to its KH pocket-catalog, embodying all its new designs in sanitary pottery. Among the most interesting of these are the "Hinsdale" urinal-stalls with flushing device, the "Kiani" all-roll-rim square lavatories, and a vitreous-china pedestal drinking fountain. Copies of this supplement can be obtained upon request from the Trenton Potteries Co.

The Deming Co., Salem, O., presents in the attractive form of an artistic booklet its business history, under the title of "A Generation of Progress." It details the commencement of the company's operation in 1880 under the name of Silver & Deming Manufacturing Co., manufacturing hand and wind-mill pumps. In 1890, the business had grown so much that two organizations were created and the Deming Co. took over the pump business. Today the company's manufacturing processes are conducted in buildings possessing a floor space of over 225,000 sq. ft. Pumps for farm, house and orchard, domestic water-supply, mines and mills, waterworks, factories, land and sea, desert and mountain—all these types are provided by the Deming industry. The booklet clearly tells their range. You can possess it by writing to the Deming Co.

INDIANA SUPPLY CO. ENLARGING ITS FACILITIES.

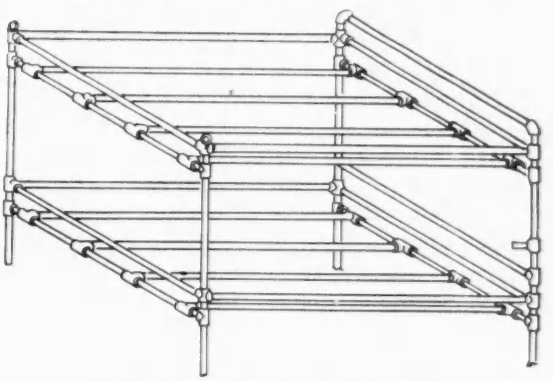
The Indiana Supply Co., Capitol Ave. & Market St., Indianapolis, Ind., has recently experienced such an increase in business that it has found it necessary to enlarge its facilities. While passing the establishment one day last week a photographer noticed a good-looking

J. M. Gilchrist, of Indiana Supply Co., Indianapolis, Ind., and Some of His Friends.

crowd in front of one of its show windows and he took a snap-shot, the result of which is shown herewith. The second gentleman from the left is J. M. Gilchrist, vice-president and manager of the Indiana Supply Co., and the third is John Plath, of the United States Sanitary Mfg. Co., Pittsburgh, Pa.

A SANITARY BUNK OF PIPE-CONSTRUCTION.

Chas. Scheer, Silverton, Colo., is in the plumbing, steam and hot-water fitting businesses, but finds time to attend to other sanitary matters. One of his recent inventions is a bunk of pipe-construction, designed to provide a portable sleeping-place and especially adapted to the needs of those engaged in construction work. The illustration tells



A Sanitary Bunk of Pipe-Construction.

the story. The four corner-posts have double T-couplings and these, in connection with a single T-couplings, provide for the speedy erection of a portable bunk. The reader will note the guard-rails at the sides and ends, which prevent sleepers from rolling out. The mattress, or spring mattress, has slatted supports. Steps are provided for the purpose of reaching the upper bunk. Mr. Scheer's invention has already been approved by mining and railroad companies, and his shop-force is likely to be kept busy during the coming season.

VALVE-EFFICIENCY MAINTENANCE.

When tenants and other inexperienced and devil-may-care people crack or crush the commonly-used composition rubber discs, when the disc is lifted off the body-seat by alternate contractive and expansive action, then The Osborne High-Pressure Joint & Valve Co., Chicago, offers its radiator-valves with metal seats as a satisfactory solution of the problem. Leaky valves are a well-known source of trouble. Supposed to be closed, they allow the steam to leak into the cold radiator. It condenses and the radiator soon fills with cold water. When

The Osborne Radiator-Valve.

the steam is turned on full, then the water-hammer begins. Water may be forced through the air-valves, causing ruin, and the system is not working at its highest efficiency.

The "Osborne" valve is made with a metal disc. The body-seat is bevelled to form a wedge, which constantly makes a new joint in seating. It is practically a double-seated valve with a water-seal between the two sets of seats. Being tight when closed, it prevents the troubles above cited. The reasons for its efficient and constant action are clearly set forth in a neat folder issued by the manufacturers. If you are interested in valve-construction in connection with your radiators, you can obtain this illustrated data by application to the company.

INTERESTING ADDRESSES TO BE GIVEN AT BOSTON CONGRESS.

At the Congress of Technology, to be held in Boston, Mass., April 10, 1911, many papers of interest to sanitary engineers will be presented. Among these may be noted the following:

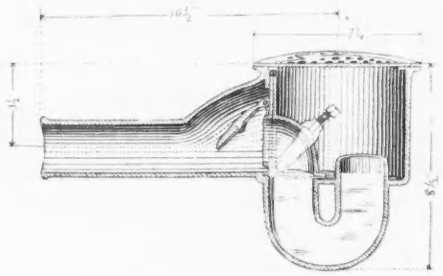
"Legal Points Connected with Architects' Specifications," by Walter H. Kilham.

"Sewage Disposal with Respect to Offensive Odors," and the relation of disposal to the real and supposed interests of property owners, by Geo. W. Fuller.

"The Pollution of Streams by Manufacturing Wastes," and the present legal status of such pollution, by Wm. S. Johnson.

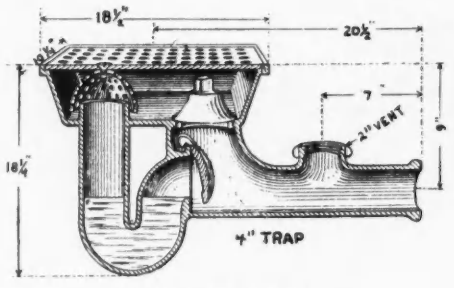
FLOOR-DRAINS AND BACK-WATER TRAPS.

Weiler Bros., Troy and Leonhard Sts., Dayton, O., make a specialty of floor-drains and back-water traps. These are made extra heavy and are cast in one piece to avoid possibility of leakage from corroded screws, strained



Weiler's New Floor-Drain.

joints and bad fittings. A brass clean-out plug enables the ready cleaning of the P-trap and also gives access to the waste-pipe leading from the trap. The inside screen is bell-shaped, completely covering the outlet, with holes double the capacity of the trap. Installation is completed by calking one point at the waste-pipe, all roughing-in



Weiler's Shower-Drain.

measurements being exactly and clearly given. This trap does not require a deep sewer. The clean-out plug is not covered by the floor and is easily accessible. Weiler Bros. also manufacture a shower-stall drain of similar efficiency. Complete description of these can be obtained by application to the Dayton office.

COLUMBUS, O., HAS NEW HOUSING CODE.

After several months discussion, the city council of Columbus, O., has passed the ordinance generally known as the housing code. The code seeks to regulate the building of all tenement houses in Columbus with a special reference to sewers, ventilation and general sanitation. Among other things the code provides that every tenement house shall contain in each apartment a proper sink with running water. There shall also be in each apartment a water-closet in a separate compartment. In all tenement houses hereafter erected where plumbing or other pipes pass through floors or partitions the openings around such pipes shall be sealed or made air-tight so as to prevent the passage of air or the spread from one floor to another, or from one room to another. No water closet shall be maintained in the cellar or basement of any tenement house without a special permit from the health department. Considerable space is devoted to the regulations on lighting and ventilation. The ordinance gives the health department and the city building department complete supervision over the building of all tenement houses in the city of Columbus. Adequate penalties are provided for violations of the code.